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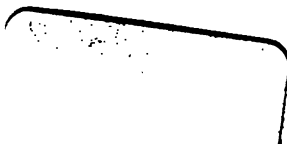
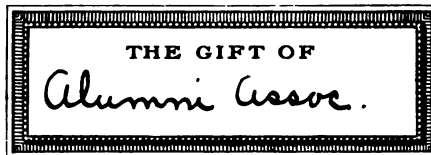
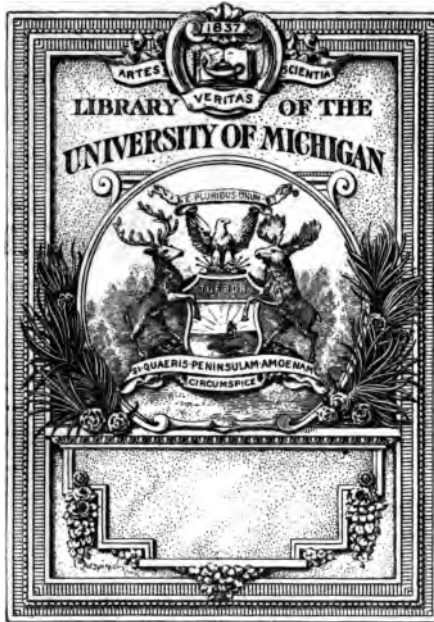
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THE CREATION OF WEALTH

J. H. LOCKWOOD





THE CREATION OF WEALTH

*Modern Efficiency Methods Analyzed
and Applied*

BY

J. H. LOCKWOOD

CINCINNATI

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FOREWORD

If the reader, in taking up this book, should become alarmed at the term "economics," which it professes to touch upon, he should not unceremoniously cast it aside, for it may not be so dangerously economic after all. In this reflection the economists will no doubt heartily concur. This treatise does not deal with the ordinary subject-matter to be found in the current works on economics, but begins where they leave off and attempts to build a super-science, so to speak, upon the old one.

There has been a tendency in recent literature treating of industrial life to emphasize a mysterious element ulterior to the recognized factors of production—land, labor and capital. The subject has been approached from the practical side by Harrington Emerson in his treatises on "Efficiency"; by Frederick W. Taylor, in his "Scientific Management," and others. Hugo Munsterberg and other psychologists have discoursed upon it from their point of view, and W. H. Mallock and various social writers have dealt with it from a humanitarian angle—and even the poetically inclined have not altogether ignored it, for Gerald Stanley Lee, in "Inspired Millionaires" and "Crowds," gets a glimpse of a great truth from Mt. (Parnassus) Tom.

While by inference the mysterious element is brains—or brain products—(ideas), yet, as far as the author has noted, no attempt has been made to analyze the economic functions of the mind or to determine just in what manner it “creates” wealth. Munsterberg, in his recent work on “Psychology and Industrial Efficiency,” says that a new science is developing “intermediate between the modern laboratory psychology and the problems of economics.” This may be true, but it would appear that the object of all methods of producing greater efficiency is to increase economic production, and that this function of industrial workers naturally falls under the head of Political Economy.

It does not concern the author, however, whether the economists, of which there is a great variety, recognize his efforts as an addition to the science, or as one of the new sciences which Professor Munsterberg refers to, being content if he has proven the productivity of the factor of mind. The author endeavors to delineate the creativeness of man in its widest aspect, and, if in so doing the conclusions sometimes reached are somewhat startling, they are honest ones, and he will be the first to acknowledge his error if it can be shown.

Is it not suggestive that economics should be the last of the sciences to recognize impalpable forces in the consideration of material and industrial phenomena? Even physics, which is supposed to deal with matter solely, has advanced to a point where the greater part of the treatises on the subject is devoted to the discussion of “energy.” As far back as 1892 George F. Barker, in his text-

book on "Physics," said in the preface to the work:

"Within the past decade the progress which has been made in the physical science has completely changed its aspect. The most striking feature of this advance, unquestionably, is the much greater importance which the phenomena of energy have assumed in all physical discussions as compared with the phenomena of matter. The physics of to-day is distinctly the science of energy. Henceforth every physical change must be regarded as conditioned upon the transference or transformation of energy. It is from this point of view, therefore, that any text-book of physics must present the subject. Hence the classification which has been adopted in the present work is based on the most recent views of energy, considered as being ultimately a phenomenon of ether. At present, all physical phenomena seem capable of satisfactory discussion under the heads of mass-physics, molecule-physics and ether-physics. And the fact is significant that to the last subdivision of the subject it has been found necessary to devote more than one-half of the entire work."

Since the statement quoted was written, still greater advancement has been made in the science. The electron has supplanted the atom in the consideration of physical units, and upon this theory has been founded a new branch of the science. Physics has laid bare to the industrial world that marvel of all physical or ether wonder-workers, electricity, and has tamed and harnessed it for the use of man. This is the force that carries our messages over land or sea, with or without wires; it is the force

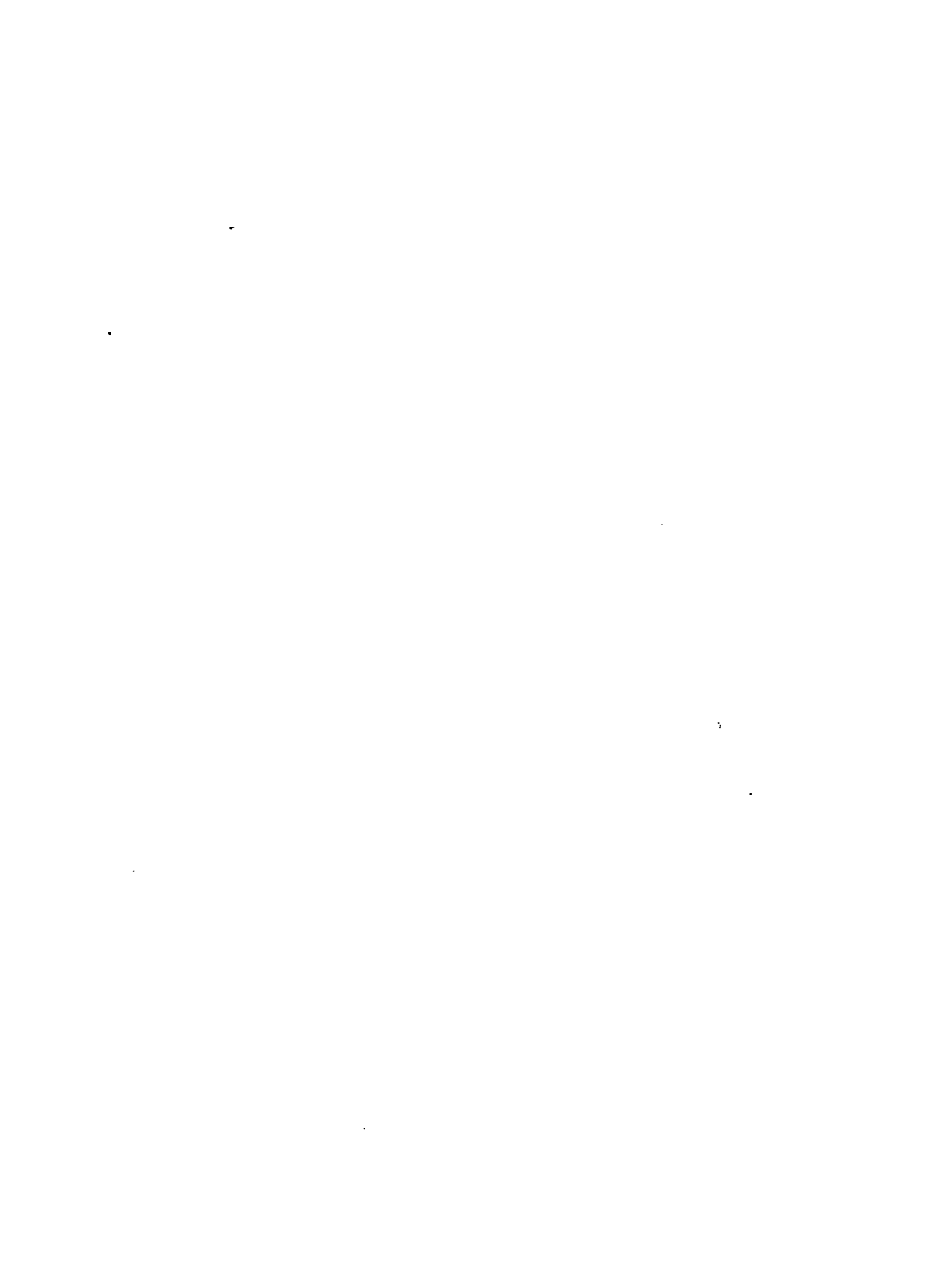
that bears the human voice across a continent, and allows us, as it were, to be in two or more places at the same time; it transports us and all the materials that go to make up modern life at a mile a minute; it lights our cities, turns the wheels of industry, and works marvels in a thousand ways in the applied arts and sciences.

In this work it will be shown how the mind of man has uncovered all of these wonders—and more in other sciences—and how it works hand in hand with these energies in the production of wealth. Manual labor may be compared with the five mechanical powers—the lever, pulley, wheel, inclined plane and screw; *i. e.*, it can only remove material from place to place, while the mind of man may be compared with the impalpable forces, electricity, cohesion, adhesion, gravity and chemical reactions. These forces not only move material, but substitute better material for the old, and, in some instances, eliminate matter altogether.

The author will attempt to show in succeeding chapters how all modes of mental expression can be classed under fifteen “efficiency methods” or “expression forms”; and an attempt will be made to analyze the economic functions of the various mental workers of the world with reference to these methods.

In these feverish days of social and industrial unrest, even though much of it be irresponsible and unreasoning, where a host of nondescript malcontents are endeavoring to pull down on our heads the magnificent economic superstructure we have reared, it may not be amiss to stop and consider if

it is worth the trouble. What with socialism, syndicalism, single taxism, and many other "isms" too chameleonic to classify, armed to the teeth, in a tremendous fight against the ruling economic order, it may be well to try to get down to a working theory of Industrialism; to take an inventory of what has been done, to try to discover what is about to be done and to determine whether "has-beens" and "about-to-bes" are in harmony or disharmony with the "ought-to-bes."



INTRODUCTION

In the evolution of the various sciences and arts, none, perhaps, has had a harder struggle than that of Political Economy. The old Mercantilists, mistaking the shadow for the substance, held wealth and money identical. The Physiocrats added raw materials to metals, or money, in their consideration of productive wealth. Adam Smith and John Stuart Mill went a step further and recognized all products of land, labor and capital as constituting wealth, while modern economists have gone still further and recognize mental labor, in a limited sense, as a source of wealth; namely, in the sense of direction or management. The idea of creative wealth and the stupendous part it plays in the production of wealth does not appear to have been thought of, or, if so, entirely ignored.

In his economic treatise on "Enterprise and Productive Processes," F. B. Hawley says: "When Adam Smith revolutionized the science of Economics he halted in his analysis at two very important points, which, as every specialist will admit, his successors have not succeeded fully in resolving. These two dubious matters are the precise function of the entrepreneur and the exact scope of the science itself." And further on he says:

"It will be difficult to find an economist who would claim that he possesses a standard, con-

formity to which can be demanded in economic conditions and in the use of economic terms; or that the function of the entrepreneur or the nature of profit are thoroughly understood; or that he is fully aware of a satisfactory definition of the science itself." He adds: "Suffice it to say that economists, generally, in the words of one of them, accept co-ordination (of land, labor and capital) as a 'singularly felicitous phrase,' to express the economic function of the entrepreneur."

The author quoted says that economists are not agreed upon the exact scope of the science. This is not to be marveled at when their inadequate definition of wealth is considered. To paraphrase the dictum of Terence, "I am a man and nothing that pertains to man is alien from me," Political Economy is the science of wealth and nothing that pertains to wealth is foreign to it. It will be shown in this treatise that many things which are not now considered by economists as factors of wealth must be so considered. The economists have erred in their consideration of wealth in two important points. First, in its limitation to material objects which can be transferred or appropriated; and, second, in their failure to recognize that a thing may be of value at one time or place and not at another time or place; *i. e.*, they fail to distinguish between direct and indirect wealth.

Economic life is in a state of flux, and wealth and non-wealth are perpetually playing hide-and-seek. Even the value of material objects fluctuates with changing conditions, and such a substantial thing as a house or any other kind of a building

may represent a liability rather than an asset if the rentals therefrom do not exceed the cost of maintenance, interest, taxes, etc.

The inadequate scope of economy, as taught, is nowhere better illustrated than in the treatment of inventions. In most of the text-books on Political Economy, this great economic factor, if treated at all, is glossed over with a few lines or a paragraph, and is casually mentioned under the head of "Profits" or some equally absurd division of the science. It is a remarkable fact that the economists should have overlooked this prodigious source of wealth. An inventor, scientist, playwright, or the like, will produce something for which he is paid outright thousands of dollars, yet this form of creative or "idea-wealth" is practically ignored. It can be explained only on the theory of the innate conservatism of man—his habit of following customs and respecting time-honored authorities. Adam Smith and John Stuart Mill blazed the way for the mechanical theory of wealth which has held sway for so long a time.

It shall be conclusively proven that man is wealth *per se*, and, furthermore, that he creates wealth. The word "create" is used in its literal sense—the making of something out of nothing, if we consider that ideas and other impalpable forces are such.

Economics, as treated by its orthodox exponents, might be called the science of transferable material objects, with a total disregard for any of their properties excepting those representing utility. This faulty concept is the basis of an endless variety of

errors arising in the discussion of the science, which Seligman, Hawley and other economists admit is in its infancy.

In his text-book on "Principles of Economics," Seligman says: "As the science itself becomes more and more complete, it will be in a better position to apprehend and explain the real content of existing conditions and the true method of making the actual conform to the ideal. Economics, which is to-day only in its infancy, and which of all disciplines is perhaps the most difficult and the most complicated, is indeed interlaced with and founded upon the actual condition of the time; but, like natural science, the economics of the future will enable us to comprehend the living forces at work, and by so doing will put us in a position to control them and to mould them to even higher uses. Economics is, therefore, both the creature and the creator. It is the creature of the past; it is the creator of the future. Correctly conceived, adequately outlined, fearlessly developed, it is the prop of ethical upbuilding; it is the basis of social progress."

A better statement of the case could not well be made, and if this writer can assist even in a small measure in assisting in the solution of the social and economic problems which to-day agitate the country and the world, his labors will have been well repaid.

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I.

WEALTH.

What is wealth? We have seen that the Mercantilists held money to be the only wealth, that the Physiocrats added raw materials and that Adam Smith and his followers enlarged the definition to mean any material utility which requires labor for its production and which can be appropriated or exchanged. We will endeavor to show that all of these definitions are defective, but that each succeeding group came a little nearer to the truth.

Wealth has a subjective and an objective aspect. Subjectively, it is the realization of one's desires or needs. Objectively, it is the product of two factors—opportunity and labor, or its antithesis, play. Work and play should be interchangeable terms in a perfect state of economic development. The term labor includes mental as well as manual labor. Of course the desires and needs represented in subjective wealth are properly confined to those things which have a money value. Subjectively, the value of a thing does not depend upon a money equivalent.

The value of things varies with localities and seasons. For example, an apple may be of no particular value in the country in a prolific year, whereas in the city something can always be realized from its sale. A little thought will enable one

to perceive that there is no hard-and-fast line running between indirect or potential wealth and what has been designated as economic wealth. To illustrate: The apple, which has been called the "Fruit of the Gods," in lean years, or when there is only an average crop, may be designated as economic wealth. A market can readily be found for the entire crop. But in years of abundance many apples are allowed to go to waste in the orchard. The fruit that is permitted to rot is plainly of no economic value as such. It may enrich the ground to a certain extent and render an economic service in that way, but this is only an incidental service. Suppose that, instead of permitting the fruit to decay, it is given to the needy, does it then become economic wealth? If you answer no, as it has no exchange value, we will put the question in a different way: Suppose the fruit is given only to those who will come after it—do not the time and labor devoted to its procurance, on one hand, and the element of land in its production, on the other hand, constitute the productive factors of economic wealth? This question can only be answered in the affirmative.

The apple thus becomes wealth to the recipient. It will be shown how it could be made productive to the original owner by the application of the brain and muscle forms of labor. There are several ways in which this could be done; namely, in drying or canning, by feeding to live stock, by converting into cider, or by placing them in storage. They could be kept in one or more of these ways until a demand is either created in foreign countries or

until a short crop renders them of economic value. Rapid transportation and refrigeration have made available other methods of utilizing perishable goods.

In the same manner an idea or a thought may be of value or otherwise. The law of supply and demand governs alike the material and immaterial world. If the idea is a rare one, and one that appeals to the popular mind, it can be marketed as wealth.

Applying this principle to natural objects, it will be seen that great scenic or climatic attractions may, or may not, have an economic value. If the natural scenery of a section of a country has such distinguishing characteristics as to attract travelers and sight-seers, it must be classed as wealth. If the climatic conditions are such as to attract health and home seekers, the same classification obtains.

The United States has a great number of international playgrounds, including the Yellowstone National Park, the Yosemite Valley, Niagara Falls and other scenic wonders. People are willing to expend both time and money to see these great cosmic creations. In other words, these attractions afford an opportunity to play, and this opportunity attracts untold wealth, not only from other sections of the country, but from all parts of the world.

But the orthodox economists will contend that this is not productive wealth. The answer is that money is the measure of wealth and that it can be exchanged for anything of value representing man's needs. Further along it will be shown how this kind of wealth can be, and is, capitalized. Surely, the international playgrounds must be classed with

other things possessing beauty or other qualities which please the senses. A girl purchases a hat—is it principally for useful or ornamental purposes? What about jewelry, fine clothes, beautiful houses and all things of a decorative nature? When James J. Hill, David H. Moffatt, C. P. Huntington and other master railroad builders conceived the idea of opening up the great scenic West to the world, they evidently overlooked the economic doctrine that there can be no value except in things of a productive nature. Perhaps they were ignorant of the teachings of Political Economy and foolishly built their roads while laboring under the economic delusion of a value in things which appeal to one's sense of grandeur or beauty. If such be the case, it is very fortunate for the country.

Wealth, then, in view of the above considerations, is anything which can be appropriated or exchanged, or which the qualities thereof may be appropriated, admired or enjoyed. The drawing of a line between the useful and the ornamental, between the material and the immaterial, by the economists has prevented them from grasping the great central truth of creative wealth as applied to industrial conditions to-day.

An individual pays admission into a theater to witness a play. He does not buy or appropriate the house nor the players, but merely appropriates or admires the immaterial enjoyments they offer. He goes to hear a band or an orchestra. He does not purchase the band, nor even the director. He purchase a ticket for a menagerie. Does he carry away any lions or monkeys?

A man purchases a house. This is a transfer of material things. He leases the building for one or a hundred years. This is a transfer of the qualities of the building. In either case, the original owner derives a benefit in the shape of money or its equivalent, while the occupant secures shelter and a home, the purpose for which the house was built.

Let us apply the same reasoning to labor. Before the war, slaves were considered property, because there was a transfer by purchase from one plantation-owner to another. Now they are employed by the day, month or year. This may be compared to the leasing of the building. Is there any valid reason why the building should be classed as wealth and the laborer not so classed? In either event all that the lessee or employer secures are the qualities or attributes of the building or person.

Stating it as concisely as possible, wealth may be defined as anything which satisfies the needs, desires or aspirations of man, and it may be either material or immaterial. As an illustration, a lover of art purchases a painting depicting some sublime or spiritual truth. What gives the work of art its value—the arrangement of the colors, lights and shadows, or the great æsthetic or moral idea which the colorings convey? Does the painting have a mere physical value expressed in a combination of colors pleasing to the eye, or does its worth lie in the psychical portraiture of a moral verity? There can be but one answer to the question—the value of the painting is principally of a psychical nature.

The economists can not ignore this phase of

wealth, for the physical and the psychical are inseparable and hopelessly intermingled. It can not be said that so much of the picture as is material is wealth, and all else is of no value. It follows that innumerable immaterial properties or qualities which have heretofore been left out in the consideration of economic matters must now be given recognition.

The wealth of an apple consists mainly in its ability to satisfy the sense of taste; the wealth of a flower is in its power to please the senses of sight and smell; the wealth of the violin lies in its power to excite the sense of hearing. Formerly clothing was made or purchased principally to satisfy the sense of feeling—that is, to protect the body from the elements—but now it may be said that the æsthetic sense must be satisfied primarily, the sense of feeling having been relegated. In like manner, a residence which was formerly built to provide shelter and protection must now have ornamental additions and surroundings. For instance, the judicious planting of trees, shrubbery and flowers lends the property a value out of all proportion to the amount expended.

In mathematics and kindred subjects there is an axiom which proclaims that things which are equal to the same thing are equal to each other. Therefore, if immaterial as well as material things have a money value, then they must be classed as wealth. But it may be objected that the attributes of man must be classed as personal, rather than economic, wealth. In answer to this, it may be said that there is no such thing as personal or individualistic wealth pure and simple; *i. e.*, where there is a money con-

sideration. The law that no man can live unto himself applies equally to the economic and social worlds. First, speaking generally, every one has a family or relatives dependent upon him, or at least a servant, and whatever benefits he may derive from his personal exertions are shared by members of his household. Second, the more people there are in the world, the greater the opportunity for the acquisition of wealth by any one individual. For example, if there were only two people in the world, they would have a hard time getting rich by trading with each other. It is axiomatic that the more people one has to sell to or trade with the more wealth he can accumulate. Therefore, as any individual increases the population by one, he adds that much to the sum total of opportunities of acquiring wealth. In succeeding chapters it will be shown that practically all men, of whatsoever trade, business or profession, contribute directly to economic production, so called, and that even the minister must be placed with the rest of the economic producers.

Anything which affords an opportunity to labor must also be classed as wealth. That the manual laborer must have tools with which to work is self-evident. That is, without the aid of a second factor manual labor is powerless. The farmer must have a farm; the artisan, tools and material; the mechanic, a factory, etc. If a genius invents an article, the manufacture of which gives employment to labor; if a playwright produces a drama, which gives to members of the histrionic art employment; if a writer composes a book, which likewise fur-

nishes employment to printers and members of the craft—all of these must be considered as wealth. These men are a source of wealth and are illustrative of the definition of wealth given, in the sense that their qualities are wealth-producing.

It is also evident that anything which serves as a substitute for labor is wealth. A labor-saving machine is wealth. But a machine which requires but a comparatively small amount of labor to manufacture may do the work of hundreds or thousands. What is represented in the difference between the quantity of labor required to manufacture the machine and the labor required to do the work without the machine? Manifestly, the idea upon which the invention was based.

If people, individually and collectively, must be classed as general wealth, the question may be asked, what is the value of a man to the community or to a nation? The answer is, he may be worth practically nothing, or he may be worth millions. The ordinary tramp is a liability rather than an asset, while the emanations from Edison's mind have taken the form of creative wealth which can not be estimated in dollars and cents. Between these two extremes are classes whose worth to the world vary in proportion to the wealth they produce by the labor of hands or mind. This will be elucidated further on.*

Indirect wealth is potential wealth, whether it be

*Will the economists who contend that man is not wealth please explain how ballplayers are sold for fabulous sums, and why it is that baseball writers refer to the \$100,000 infield of the Philadelphia Athletics?

of a material or immaterial nature. It is the undiscovered and undeveloped resources of a country and the unused and unapplied talents and skill of man. While education is indirectly responsible for the marvelous industrial and commercial conditions prevailing to-day, yet it may be termed latent or indirect wealth. It is not a creative force except where the cause and effect are direct. Persons are educated in a general way, and the information thus accruing may be utilized in a number of pursuits. The economic results may be greater by pursuing one trade or calling than another. All are familiar with persons of high education who have but very little economic value. In its practical application to economic life, education is wealth.

A distinction should be made between indirect and non-productive wealth. While indirect wealth is always non-productive wealth, the latter, in a great many instances, must be classed as wealth. For example, vacant and unused property in settled parts of the country is non-producing, yet it must be classed as direct wealth. It is taxed as such and can be sold for a consideration, whether it be great or small.

Indirect wealth may be inherent in the individual, or it may be communicated to him from a person or thing. To illustrate, the natural powers or qualities of man, mental faculties, talent, strength, etc., are inherent, while acquired qualities, education, skill, knowledge, and the like, are communicated through persons or things—books, tools—and also through his struggles with animate and inanimate nature.

As applied to material things, indirect wealth is found in all potential commercial elements not utilized—the minerals in the ground, the unoccupied and uncultivated soil, the neglected pastures and forage on the Western plains, inventions not perfected, magazines and newspapers whose space is not made use of by those who have things to sell, scenic beauties, and a thousand and one elements embodying opportunities to man. And, strange to say, these opportunities increase rather than decrease with time, for the reason that economic life is becoming more complex with the advancing years.

II.

CAPITAL.

The economists tell us that land, labor and capital comprise the trilogy of wealth, with a little enterprise thrown in for good measure. In this chapter an effort will be made to determine the nature of capital; to find out whether it in reality constitutes a living economic force, or whether it is not merely a man-made convenience, as all forms of money are.

To simplify matters, imagine a state of society wherein all are endowed with infallible memories and unerring probity, or, in common parlance, where the word is as good as the bond. It is evident that under these conditions all forms of money could be dispensed with. If A is employed by B, the latter will say at the end of the day, week or month, "I am indebted to you so many days of labor. If I have anything at the present time you can use, you can take it up to the value of the labor performed" (at an exchange price previously agreed upon). "If there is nothing in my store or in my possession you desire, go to some other place and tell the person in charge that I owe you for the labor performed and that he shall let you have goods to an amount not to exceed the exchange value of the labor performed by you." As every one has an unfailing memory and an unimpeachable

reputation for honesty, there could be no confusion or theft.

By eliminating money, a clearer knowledge of the manner in which mind produces wealth can be obtained. Money is desirable only as it enables one to procure things which he needs, wants or craves. If money is taken out of consideration as above shown, an individual will devise plans of exchanging his labor, manual or mental, for things desirable which others may be able to give him. Of course the prime needs are food, clothing and shelter. When these are secured, the individual looks around for something to amuse, benefit or please. Artists of various kinds, actors, musicians, authors and men of culture will be able to satisfy these desires. But, in so doing, these various entertainers will, in most instances, find it necessary to engage others to assist them. In a state of "no-money" these assistants will be given food, clothing and shelter, and, if their talents warrant, will perhaps be allowed extra compensation in the way of amusements or other forms of dynamic wealth.

As a corollary to the above, it follows that individuals obtain, as a general proposition, what they desire or fit themselves for. If they have no ambitions above the animal, and only desire the prime necessities, that is probably all they will secure. If they have higher ambitions, by cultivating their minds they will be able to obtain more of their wants by being able to give others more in exchange.

Another corollary is, that the higher the civilization, the greater the wealth of a community. As we

have shown, the more highly the people of a country are educated or talented, the greater the demand for labor, and the more labor the more wealth.

Now, capital is inert: it can not produce a single penny of its own accord. What about interest? It isn't the money or capital which makes the interest; it is the man who borrows the money and applies brains to manufacture, commerce, or other economic pursuits. Land is the only factor of the economic trilogy that will produce independently; as, wild fruit, nuts, etc. Labor must have material with which to work.

Having shown that money can be dispensed with under certain conditions, and recognizing the axiom that capital, whether it be in the form of money, buildings, material, is inert and powerless to produce wealth, let us try to determine the true nature of capital. It might be defined as the power or capacity to provide food, shelter, clothing, amusements, or other desirables, for oneself and others. We have previously shown that, with money eliminated, exchanges will be made in terms of labor and desires. An individual conceives the idea of going into the manufacturing business, for example. To do so, he must control a sufficient quantity of necessities and utilities to exchange for labor. First, for the erection of the factory buildings; second, for procuring of stock and fixtures, and, third, for the operation of the plant. Or, if he does not control these things, he must be a man of such probity and capacity that laborers will know that his promise, whether written or verbal, is a sufficient guarantee of remuneration for their labor. Having such a

reputation, it will be an easy matter for him to secure the workmen.

Suppose, after the factory has been in operation for some time, the owner dies—what will happen? Unless some one can be found with a capacity for carrying on the business, it will finally collapse, although it may run for a greater or less length of time from its own inertia. Of course it will not run at all without a certain amount of brain work, managerial and clerical, but if a man of initiative and vision be not at its head, it will, in the long run, be outstripped by more progressive enterprises.

Capital, then, in its essence, is the capacity for doing things, combined with strict integrity, or, in brief, it is represented by the terms character and capacity.

Having eliminated all forms of money, what would be the natural result? The question would be then, not, "How much is he worth?" but, "How much labor can he control—what is the exponent of his brain power in the production of wealth?"

To get away from the mechanical theory of wealth, let us imagine a people of a southern clime whose physical wants in the way of food and clothing are easily obtainable. The question then would be, "What is his capacity for entertaining, as a musician, artist, actor or writer?" Or, broadly, "What has he got in his mind?" that is, idea-wealth in the way of instructive and entertaining knowledge?

Further along it will be shown how the introduction of labor-saving machinery, discoveries and devices, in manufacture and agriculture, has produced a condition analogous to that just described.

III.

DIVISIONS OF WEALTH.

Wealth may be divided roughly into four classes ; namely, Static, Dynamic, Creative or "Ideaistic" and National.

Static wealth represents the economic products of a quiescent or non-progressive people. Such wealth is produced in the endeavor to obtain primary needs, and represents different things in different localities, climates and countries. For instance, considering food, clothing and shelter prime necessities, static wealth in America would mean plain food and clothing and a comfortable dwelling. In the islands of the Pacific it would mean various fruits and herbs for food, beads and a belt for clothing and a bamboo shack for shelter. In a word, it is a man's needs reduced to the lowest terms.

Dynamic wealth is embodied in the concrete growth, or the materialized aspirations of man, and corresponds to the needs of his higher nature. Such needs may not necessarily be elevating or beneficial. Fine clothing, for example, may be classed as dynamic wealth. Broadly stated, this form of wealth is found in the accumulation of products arising from an advanced state of civilization, and would, therefore, have varied meanings, corresponding to the economic state of the people under con-

sideration. A plain, hand-made shoe would be classed as static wealth in America, whereas, in Holland, a wooden shoe would be placed in that class and the leather shoe in the dynamic category.

Creative or ideaistic wealth is that produced by mental effort. The classes producing this form of wealth are the inventors, scientists, chemists, musicians, orators, artists, actors, entrepreneurs, and the like. Ideaistic wealth is also represented in dynamic wealth. The latter may, in fact, be termed materialized ideaistic wealth. An orator has his speech published, and it at once becomes dynamic wealth. An inventor conceives a useful or pleasing contrivance, and, when perfected, it becomes dynamic wealth, and so on with the other ideaistic occupations. An inventor is paid thousands or tens of thousands of dollars for an invention. The actual labor involved in its manufacture may be inconsiderable. It has been said that the Steel Trust has offered a million dollars to the person who discovers a way to utilize "breeze," or coke dust. Even greater offers have been made by railroad companies for a practicable concrete tie.

The fourth economic division of wealth is that of national or natural wealth, and included in it are all of those qualities of nature which appeal to the æsthetic sense or are otherwise pleasing and beneficial to man. It may be defined as that part of nature, economically attractive, which is not included in the orthodox definition of land. It should, perhaps, be logically classed as land, or static wealth, but as it is not a fixed quantity and constitutes a value in which the entire nation may participate, it

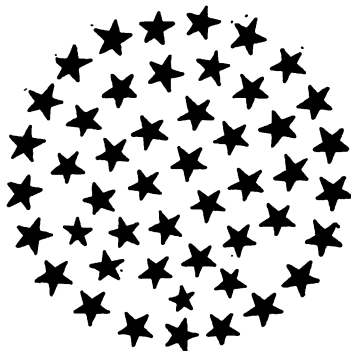
can more appropriately be classed as national wealth. It partakes of both static and dynamic wealth. In its materiality it is land; in its essence it has those qualities which form the basis of dynamic wealth, such as beauty, grandeur, etc. Its value to a country is incalculable.

Who can estimate, for example, the wealth Switzerland has derived from her entrancing mountains and lakes, or who can tell the worth of the Alps to Italy? It does not matter whether the wealth thus derived can be apportioned to the persons benefited—it is sufficient to know that the existence of these attractions affords an opportunity for the nations and their people to reap a harvest of gold. In considering the wealth of nations these things must be reckoned with, whether or not the economists so regard them.

To those who have spent an unforgettable week amid the wonders of Yellowstone Park, the attractive power of nature is convincing. In attracting the sight-seers it necessarily attracts the gold, which the astonished visitor readily parts with. Among those benefited are the railroad owners, hotel-keepers and tradesmen generally. There died recently a man of great vision, combining the ideaistic and the practical genius. To David H. Moffatt, the "Empire Builder," Colorado owes its wonderful development more than to any other man. The "Moffatt" road is a monument to the genius of man working in harmony with the beauties of nature. Having scaled the mountain crests, it was Moffatt's ambition to tunnel under the Rockies in the perfection of his dream of a direct

line to the Pacific Coast. But for his untimely death, this, no doubt, would have been accomplished.

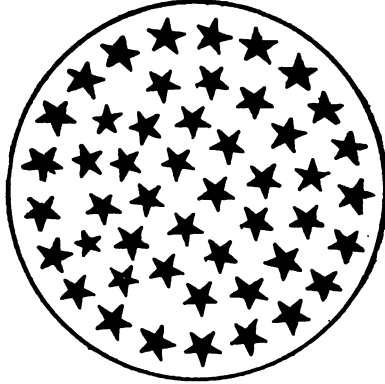
For illustrative purposes, static wealth may be represented by a series of stars, each designating an individual, thus:



This shows society in an unorganized state, and a people wherein each individual secures a livelihood without the assistance of others, except, possibly, in some fortuitous way. The primitive man engaged in the pursuits of hunting, fishing and the gathering of wild fruits is the best example of this class. Semi-civilized, and even civilized, peoples are also represented in this class. For example, the American pioneers to a certain extent were individualistic. They hunted, cultivated small farms, spun their own clothing, made their own shoes, erected log huts, with or without the assistance of neighbors, and performed many other feats which the average citizen does not do now, because he can secure the results in an easier and more economical way. There were no factories, railroads, telegraphs or other meliorating concomitants of life as experienced to-day.

Dynamic wealth may be indicated by stars inclosed in circles, indicating that the individuals represented are benefited by the dynamic form of

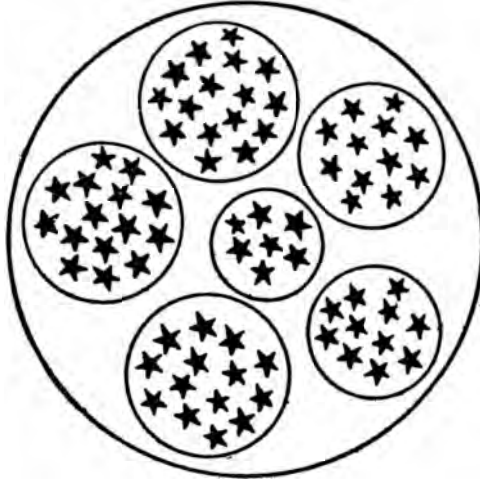
wealth which the circle may be made to stand for. Our illustration, therefore, will look something like this:



Dynamic wealth may be termed altruistic. This does not mean necessarily disinterested benevolence or altruism, but is simply a recognition of the fact that dynamic wealth in helping the producer helps others. To illustrate: An individual, in going into the manufacturing business, must first employ workmen to assist him in erecting the factory building. This is aid to the needy number one, and may be represented by a small circle as above, enclosing a number of stars designating the men employed.

Second, he must purchase equipment for the factory. This is aid to the needy number two. The men engaged in the manufacture of the machinery and other equipment will be given employment, and as different kinds of stock and fixtures will be required, the persons benefited may be represented

by a series of circles with stars, all enclosed in one large circle, thus :



Third, the manufacturer must purchase raw material with which to make the finished product. He will thus give employment to a large number of farmers, stock-raisers, miners and others, who may be indicated by a very large circle containing stars.

Fourth, he must employ men to run his factory, and the men thus benefited may be indicated by stars in a circle, large or small, according to the size of the factory.

Fifth, incidentally he benefits all who may come in contact, in a business way, with the original beneficiaries, whose money must purchase the necessities as well as the luxuries of life. We are lost

here in a maze of circles which we will not try to illustrate.

Because of its far-reaching effects, neither can ideaistic wealth be represented or mechanically illustrated. If an attempt were made, a circle enclosing a continent or a world would be required in a great many instances. Edison, the "Wizard of Menlo Park," has changed the face of the globe, and the creative wealth embodied in his prodigious activities must be indicated by circles enclosing continents or by a tree or trees on which are grafted numberless branches through inventions and discoveries.

But let us start at the beginning rather than the end of creative wealth, and endeavor to illustrate its workings.

The dawn of ideaistic wealth was probably ushered in by the musician. Some inspired primordial Beethoven acquired, perhaps, the art of whistling. At first he may have been so enraptured and pleased with the acquisition that he charged nothing for the entertainment of the astonished and worshipping hoi polloi. Later, he conceived the idea of demanding some valuable in exchange for an exhibition of his art.

After years of individual effort in his musical profession he formulated the brilliant conception of organizing a whistling band. He thereupon began the difficult undertaking of teaching others to whistle, and finally introduced to the public the first orchestra. This proved to be a far greater success than his individual efforts. Of course the ideaistic wealth is represented here in both the music, the improvisation of which was necessary, and its pro-

duction, which required musical taste and skill. Strange to relate, neither land, labor nor capital was utilized in the primitive creative wealth-producing art. Play is here substituted for the factor of labor.

If some object to this whistling band as unhistorical and purely imaginative, a band or orchestra in which instruments are used can easily be imagined in its place. The instruments, naturally, would have to be of some rude sort, manufactured from a reed or some hollow material. The advantage of this latter representation lies in the fact that it probably provided employment for more people, inasmuch as the manufacture of the instruments would form a new occupation.

Products of the mind—inventions, discoveries, etc.—hold a position in the realm of creative or ideaistic wealth similar to that of land in the material realm. The invention or discovery opens up a new field of labor, and, in most instances, reduces the price of commodities. The discovery of a new continent or new land similarly opens up such a field and reduces prices.

National wealth is possible wealth. Like an apple or any commodity that is permitted to go to waste, it may become direct wealth by the injection of the fourth factor of wealth—the creative. Under this head are included all natural objects of merit and attractiveness not included in the definitions of land, which are usually defined as that portion of the earth of which industry has rendered either the surface or the mineral riches underneath available for human requirements. A landscape painting is classed as wealth; the scene or portion of the earth

of which the painting is a miniature is considered of no economic value. Perhaps this statement should be modified, for within the past few years the residents of Kansas City, Mo., discovered by experiment that natural beauty has a value. A system of boulevards was instituted there which greatly enhanced the value of adjoining and neighboring property. But we believe this truth has not been recognized by orthodox economists. Adam Smith, in his "Wealth of Nations," did not take into consideration the wealth described. His oversight, however, is excusable, inasmuch as it is only in comparatively recent years that national wealth can be utilized in a wholesale or general way. The introduction of the railroads and steamships has made all parts of the world of easy access, and, while the beauties of nature are no more attractive now than before, nature can the more readily attract her worshippers.

Do the economists contend that moving pictures or stereopticon views of natural wonders have an economic value, while the originals have none? Is the shadow greater than the substance? The mere statement of the proposition is a sufficient answer. The prime economic distinction is that in one case the shadow is brought to man, while in the other man is conveyed to the reality.

IV.

EXPRESSION.

The basis principle of ideaistic wealth is "expression." It is proposed in this chapter to illustrate the various forms and degrees of expression as exemplified in the arts, trades and professions and trace the progress of the individuals in their evolution from the mechanical laborer to the highest exponents of creativeness.

Expression may be defined as the means by which the various forms of talent and genius are manifested. These may be manifested in an act or an object; *i. e.*, expression may be purely psychical, or part mental and part physical. Musicians, orators, actors and the like are representative of the class which uses the purely psychical forms of expression, while sculptors, painters, designers, etc., utilize part mental and part physical means of expression.

The economists have practically ignored that form of wealth which emanates from mental processes. Starting with the absurd hypothesis that man does not constitute wealth, it is but natural that they should fail to take into account this form of economic productiveness.

The term "expression," as used in this work, is a modification, or rather enlargement, of the term as applied to art, which is defined as the "develop-

ment and exhibition of character and sentiment in a work of art." The term as employed in art and kindred subjects has no reference to wealth, except indirectly; that is, stated generally, the greater the degree and quality of expression the greater its value. As a rule, subject-matter affords a more potential economic element than expression, as popularly applied. But the word will be made to cover both the subject-matter and the form of expression. In brief, it includes all acts by which an idea or truth is expressed or manifested.

Expression in itself does not necessarily constitute wealth. In fact, by far the greater number of ideas expressed, vocally or concretely, are of no economic value. The man and the idea are inseparable and are of creative economic value in proportion to the appraisement put upon them by the popular mind. Expression, as here used, therefore, means the manifestation of ideas which have an economic value, and, as in the case of material objects, they may have a value at one time and place and be of no economic worth at other times and places.

Perhaps no better illustration of the evolution or development of expression is afforded than in the case of the painter, or man with the brush. This class includes all grades, from the unskilled laborer or dauber who wields a whitewash brush, to the great painter or artist who depicts with inspired touch the highest thought and emotions.

The whitewasher, or rough painter, has little or no opportunity for expression. He stands at the bottom rung of the ladder, and expression may here

be designated by a zero, either absolute or approximate. His economic value has a mechanical basis, governed by the law of supply and demand. Indeed, he has to compete with machines invented to spray washes of different kinds on buildings.

A grade higher is the house-painter. This class is required to use a certain degree of taste or expression in arranging colors, and it might be subdivided into various grades, ranging from the unskilled to the skilled painter. The finer and more expensive houses or other structures to be painted call for a higher quality of brush-users, and the wages commanded are governed by the work done.

The third division includes sign-painters, designers and similar brush artists who require greater technical skill and imagination than the preceding classes. These command a still higher wage.

In the fourth division may be placed the portrait painters and scenic artists. This class has still greater technical ability and a more complex method of expression. Artists of this description do not work on a wage basis. Their remuneration depends upon the quality of expression shown in their work.

In the fifth, or last, division are found the great artists who not only have imagination and technique, but also are endowed with that mysterious element designated as inspiration. These artists are the supreme geniuses who see things with the eye of the soul. It may be said that the value of their work depends more upon the subject-matter, the idea or inspirative quality, than the execution, although the latter is a very important element.

They labor for the love of their art, but their productions command the highest values.

From the analysis given, it will be seen that there is no broad line of demarcation between the various forms of labor. On the contrary, the purely manual labor is, by easy steps, shaded into labor as expressed by the highest embodiments of intellect.

The development from lower to higher classes might be similarly illustrated in other arts, trades and professions: the evolution of the artisan into the sculptor, the crude orator into the inspired actor, the composer of doggerel into a great poet, the manager of an inconsequential business to a captain of industry, and so on *ad libitum*.

We might stop here and deduce the general proposition that if mental activity has a great value in the simple trades and professions, it has a far greater value, in an economic way, in the case of the business man or entrepreneur. The painter or artist has only a few elements to contend with, whereas the entrepreneur deals with a great variety of men, conditions and things. It follows that a high order of mind is required in the successful prosecution of a big business enterprise. This thought will be elaborated in the chapter on "The Entrepreneur" and also in other sections of the treatise.

The mind of man is a veritable mine of magic wealth. The real-estate dealer, for example, sees a tract of land adapted to some particular economic use, and by his powers of imagination or vision is able to conjure in his mind's eye the aspect the locality will assume in ten, twenty or thirty years

hence. Perhaps the property forms a suitable site for a city, or a large manufacturing plant, or it may be that its value is principally scenic, and the promoter has a vision of the multitudes who will be attracted hither if a railroad be extended to this land of wonder and beauty.

These are ultra examples of ideaistic wealth, and are cited as such. More obvious examples are the products of inventors, chemists, scientists and other intellectual classes.

Having shown how a mechanical laborer is evolved into an artist of great creative power, we will now, in order to further illustrate the economic value of the idea, reverse the process and trace the various aspects of ideaistic wealth in industrial and commercial life, through its form of expression; namely, inventive skill or ingenuity. That which in the arts is known as inspiration is, in the recognized economic pursuits, designated as invention.

The term invention may be applied to a machine or an apparatus as a whole, or to one of its parts. Likewise, in business life the term may be applied to the project in its entirety or to ways and means devised to promote the enterprise.

The entrepreneur may be compared with the inventor who has designed a complicated machine. First, there is the idea, the general plan or scheme of the invention or enterprise; second, follows the construction of the machine or economic plant; and, third, there is the assembling of the parts, and, fourth, the actual operation.

The entrepreneur, while not an "expressionist" in any common acceptance of the term in his nat-

ural and primary field of labor, is, nevertheless, economically considered, one of the most powerful exponents of expression. His powers of imagination, ingenuity, invention, etc., are taxed to the limit in the daily operation of a business. He may not have modeled or painted the work of art, or designed the beautiful or useful article of commerce, yet with a discerning eye he sees the value of the product, and by the exertion of all his powers places it before the public, that all may be benefited.

Stated broadly, the idea, whether it be in the shape of an invention, discovery or business project, is generally what is materialized as "watered stock"; that is, it represents the value of a business or commercial enterprise ulterior to the cost of labor and material used in the construction of the thing to be promoted.

Mind or creative energy is a source of wealth in the so-called productive pursuits in an almost endless number of ways. An attempt will be made to classify at least a majority of such methods, under a few general heads. It is understood, of course, that the author does not recognize the classification adopted by economists relative to productive and non-productive pursuits or enterprises. It has previously been shown that the useful and the æsthetic, or the physical and the psychical, are inseparable, and if the sense of the beautiful or artistic is partly gratified in some material object, there is no valid reason why it should not be gratified in immaterial manifestations.

The latter phase of the science will be more

elaborately treated in succeeding chapters. It is proposed now to enumerate some of the ways in which mind enhances industrial efficiency in productive enterprises.

First, by discovering, inventing or conceiving something which opens up new fields of labor. This is the most important method of creating wealth, and it is utilized by the entrepreneur, inventor and various kinds of discoverers, scientists and men of research.

Second, by the adaptation of labor-saving devices or plans to the operation of a business.

Third, by the introduction of material-saving devices or ideas in the way of substitution or elimination. For instance, the inventor of wireless telegraphy eliminated wires. The railroad builder saves material by eliminating curves, etc.

Fourth, by the manufacture of a better or more durable article. If a process is discovered whereby an article is made to endure longer than one it supplants, it is plain that an economic benefit to the purchaser results.

Fifth, by the introduction of processes and methods of treating land, or by the scientific selection of crops, to render it more productive. It is apparent that if land is made to yield a greater return it is equivalent to increasing the quantity of land.

Sixth, by increasing the efficiency of the laborer. This does not apply to labor-saving machinery, but to methods adopted by manufacturers or business men to increase the output per man by intelligent handling. This method is included in the scientific

management and efficiency methods of Frederick W. Taylor, Harrington Emerson and others.

Seventh, by the practical annihilation of time and space. "Time is money" in the sense that it is one of the essential elements in economic life. In fact, wages are based upon time. Of course, the annihilation of space is equivalent to the annihilation of time. If, by rapid communication or transportation, space is practically eliminated, it means the saving of time. It will readily be conceded that this method of facilitating the creation of wealth is one of the most powerful and effective of all commercial processes and appliances. Some of the great time and space annihilators are the telegraph, telephone, railroads, steamships, airships, pneumatic tubes, motors, pipe lines and methods of signaling.

Eighth, by the elimination of "waste" or "disease" in the conduct of an enterprise.

Ninth, by advertising (promotion, opening markets, etc.). Wealth in its subjective phase is embodied in a desire or need. Objectively, it is the satisfaction of that desire or need. Therefore, if an entrepreneur, by the clever setting forth of the advantages of a given commodity, creates a state of mind in the reader which later becomes an overmastering desire to purchase, he has thereby created wealth.

Tenth, by the eradication of diseases in man and in the animal and vegetable kingdoms. Considered from an economic point of view, man may be classed as a machine. If, by the introduction of sanitary methods or hygienic methods, the health of the employees of a factory is enhanced, enabling

them to turn out a greater quantity and quality of work, such methods must be considered wealth-producing. But it will be granted without argument that curative or alleviating processes applied to a tramp do not constitute economic acts.

Eleventh, by the melioration of economic environments; as, for example, by the passage of favorable laws, introduction of transportation facilities and the like.

Allied to the conservation of health is the introduction of means to make life more pleasant to the employee. Many large firms have installed rest and recreation rooms for their workmen, while others have introduced entertainments of various kinds. These employers recognize that health and goodwill in the laborers are what lubrication and scientific adjustment are to machinery.

However, the twilight zone between wealth and non-wealth is here reached. The methods are wealth-producing or otherwise, depending, of course, upon the actual effects in an economic way.

Primarily, there are three ways in which the average man can be benefited. First, the idle may be given employment; second, the employed may be granted an increase in wages; third, the cost of necessities, more or less useful, may be reduced. It follows that any idea, discovery, invention or enterprise which accomplishes any of these three desiderata is an economic boon and a form of creative wealth. It does not matter whether we can trace these various benefits throughout their ramifications to the ultimate beneficiaries, or estimate the exact value of them in dollars and cents.

But perhaps a more logical classification of "expression forms" or "efficiency methods" (depending upon whether they are considered subjectively or objectively) would be in reference to the units or factors of production, which will be designated as labor, material, land and time. Material includes all forms of capital, buildings, stock and output. In addition to these factors, the operation of an enterprise as a whole must be taken into consideration.

Illustrative of the manner in which mind can affect or influence the several factors of production, there are three things which can be done to labor, the first unit under our classification. We can *save* labor, through labor-saving devices and plans; we can *augment* labor, through the modern as well as long-established efficiency methods, and we can *cure* labor of ills or remove deleterious environments or influences.

Similar methods can be applied to the other factors of production, although exceptions must be made in a few cases. For example, we can save time, but we can not augment or cure it. But we can cure material; as, for instance, if a knife becomes dull, it can be sharpened, or if machinery becomes disordered or *sick*, it can be adjusted. As applied to the operation of a plant, all of the efficiency methods may be used with the exception of *saving*, and, in addition, two other efficiency methods may be applied; namely, the manufacture of a better article and the melioration of economic environments. All of these different methods will be fully illustrated and elaborated in succeeding chapters.

We find, then, that there are fifteen efficiency methods which may be applied to industrial or economic life, as follows:

First, creation, discovery or invention (the initial vision, plan, perception or uncovering of a project, thing or device to be exploited).

Second, labor-saving devices and plans (concrete or abstract).

Third, material-saving devices and plans (elimination or substitution).

Fourth, land-saving devices (reclamation, by irrigation, drainage, reforestation, etc.). Of course there is no substitute for land in any real sense.

Fifth, time-saving devices and plans.

Sixth, labor-augmenting devices and plans (by the so-called "efficiency" methods, elimination of useless motions, etc.), distinguished from labor-saving devices in that they "speed up" the worker without reference to machinery.

Seventh, material-augmenting devices and plans (methods of "speeding up" machinery, more scientific arrangement and handling of factory equipment, including office fixtures). This also includes methods of increasing the value or quantity of products in their manufacture or production.

Eighth, land-augmenting devices and plans (methods of increasing the productivity or value of land).

Ninth, eradication of diseases or other deleterious influences in the laborer.

Tenth, eradication of diseases or other deleterious influences in land and land products.

Eleventh, eradication of deleterious influences in

material (maladjustment, worn but repairable conditions, etc.).

Twelfth, elimination of waste, "disease," in the operation (obstructions internal and external, bad methods of conducting business, friction, etc.).

Thirteenth, advertising or promotion (augmentation of business through various methods).

Fourteenth, manufacture or production of a more durable, serviceable or attractive article.

Fifteenth, melioration of economic environments. This method applies particularly, although not wholly, to governmental legislation affecting economic conditions.

It will be observed that the last four methods apply exclusively to the operation of a plant or enterprise. Some may confuse one or more of the preceding methods with the latter, but all doubts can be removed by asking the question, Does the result obtained affect a factor of operation alone, or a general policy of management? For example, it may be asked, What is the distinction between the seventh efficiency method (material-augmenting) and the fourteenth (manufacture of a better article)? The answer is that the first, in addition to other things, increases the value or quantity of a product incidentally or in isolated instances, while the latter is the outgrowth of a general policy to manufacture or sell the best article possible in order to please and benefit the customers. Subjectively, it may augment business—*i. e.*, increase profits—or it may result otherwise. Essentially, it is a method of business promotion, for it is one of the most effective ways to increase sales, and it would be

more logical to classify it under advertising or promotion than under material-augmenting. It constitutes such an important element of economic production that it was thought best to give it a separate classification.

V.

WHO AND HOW?

Who, then, are the "expressionists" or exponents of "efficiency methods," and in what manner do they promote economic life? A complete list would perhaps comprise all working classes. The non-workers—those who will not work, those who are unable to find work and those who are unable to work—only promote economic life in a negative way; that is, they belong to the great consuming class.

An attempt will be made in this chapter to enumerate the principal classes of pure expressionists or intellectual workers, and to determine, by reference to the analysis in the preceding chapter, how they enhance the economic life of a country or the world.

A gentleman, scholarly and resourceful, was compelled to leave his home in the East and migrate westwardly for his health. He had previously taken a trip through the West, and, while there, having an intimate knowledge of geology, made a study of the rock formations in one particular locality in which he was interested because of the extreme fertility of the soil. This land, however, which consisted of a barren tract of several thousand acres, was *sans* aqua, *sans* flora and *sans* fauna. All attempts to irrigate it had failed. This prospector

believed, from his geological researches, that water could be found if a well were sunk at a certain place to a certain depth. He accordingly employed a well-driller with the unshaken faith that water would be struck in sufficient quantities to irrigate the tract of land. The well was sunk, and lo, water gushed forth from the shaft in great volume.

Here, then, we have an illustration of "creation" or discovery ("expression form" number 1). The very instant his faith became fact, great possibilities in agriculture were opened up. He had a vision and made it come true, regardless of obstacles.

Our progressive farmer began at once to construct flumes and dig ditches for irrigation purposes. Having nothing but picks and shovels for excavating, he found the work progressing very slowly. He had a plow, but no horses. Learning of a drove of wild horses in the neighboring mountains, he enlisted the services of cowboys in another section to capture some of the horses. This was accomplished after considerable difficulty. He attached the horses to his plow, which superseded picks and shovels as a mode of excavation for the trenches. This was efficiency method number 2 (labor-saving).

This worked all right for a time, but he finally struck some very hard ground, interspersed with rock. With some giant powder which he had brought with him he proceeded to blast out trenches in the callous places along the lines he had mapped out. This was efficiency method number 3 (first, by substituting a more effective excavating instrument, and, second, by going through, instead of

around, the rocky places, he saved the material of which the flumes were to be constructed).

After completing the irrigation system, our progressive farmer turned on the water, resulting in a perfect realization of his dream. This constituted efficiency method number 4 (land-saving, reclamation).

Having a large acreage, he found it necessary to employ a great many men to prepare the ground for planting. To expedite communication between the foreman and subordinates, a telephone system was installed on the ranch. This was efficiency method number 5 (time-saving).

Finding that the labor of his men was not as productive as he had reasons to believe it ought to be, and having read Taylor's and Emerson's treatises on eliminating useless motions embodied in scientific management, he applied the theories to his force of men, with the result that all became much more proficient. This was efficiency method number 6 (labor-augmenting).

One of the principal products raised was the sugar beet, and, having become dissatisfied with the quantity of sugar produced and having learned that the Germans had discovered a chemical process whereby the quantity of sugar extracted from the vegetable was greatly increased, he applied the process with the result of "materially augmenting" his production of sugar. This, of course, was efficiency method number 7 (material-augmenting).

Upon analysis, he discovered that some of the soil on his farm was wanting in nitrogen. He thereupon erected an electric plant to extract nitric

acid from the air by the newly discovered electric process, and thereby realized efficiency method number 8 (land-augmenting device).

About this time an epidemic of a severe nature became prevalent among his employees. He minimized the virulence of the disease by the administration of vaccine serum. This was efficiency method number 9 (eradication of diseases in the laborer).

His crop of growing potatoes was besieged by the Colorado bug. He ordered his men to sprinkle paris green on the plants, thus destroying the insects. This was efficiency method number 10 (eradication of deleterious influences in land products).

In harvesting his wheat, he discovered that he had failed to secure a grindstone with which to sharpen his sickles and knives. He found a stone on his farm of suitable quality and from it a grindstone was improvised. This was efficiency method number 11 (eradication of deleterious influences in material).

A tribe of Indians came down from the mountains and made a raid on his growing crops, carrying away and destroying a large quantity, and threatening to destroy the buildings and occupants. Our scientific farmer stole out to their tent in the night, and, with a charge of giant powder, blew up the camp. This was efficiency method number 12 (elimination of friction in operation, or, rather, external obstruction).

Later on the products of the farm had increased to such a degree that it was difficult to find a market for them. By advertising in the newspapers

(number 13) the superiority of his products, some of which had been perfected through Burbank's methods (number 14), he found no difficulty in disposing of them at good prices.

In the meantime, through his agitation and governmental aid, capitalists had constructed a railroad through his tract of land, which constituted efficiency method number 15 (melioration of economic environment).

The precise function of the lawyer in the industrial world has been a source of considerable worry to the author, as he has a number of valued friends in that class. It will be admitted a person does not employ an attorney for the "fun of it." His economic value, therefore, lies outside the hedonistic or æsthetic circle. In what, then, does his economic worth consist? Of the fifteen ways enumerated by which mind assists in producing wealth, all were readily cast aside as inapplicable, with one exception. This was number 12, or elimination of waste in operation. Herein lay the answer. But how does an attorney eliminate waste? By removing friction.

Friction is a term that may be applied to the machinery of a plant, in the rubbing of parts together, or to relations, proprietorial or managerial, in its every-day operation. If friction—disputes or controversies—arise between business men involving legal phases, it becomes necessary to employ legal experts to remove the friction in order that there be no economic waste.

It should also be remembered that many attorneys are chosen to represent the people in legisla-

tures and Congress and thereby render economic service in a more general way. In fact, it is in this manner that they contribute most largely to the real science of "Political Economy." The passage of a tariff or currency bill, for example, directly affects the status of the industries of a nation, and indirectly the entire people of that country. This service would fall under efficiency head number 15 (melioration of economic conditions).

Having found an honorable niche for the disciples of law in the economic superstructure, the placing of other professions, trades and pursuits ought to be easy. The function of the physician naturally falls under the ninth efficiency method (eradication of diseases and removal of deleterious influences of a contaminating nature). As we have seen, man may be classed as a machine, and if he "breaks down," to "mend" him is plainly an economic function. Physicians, bacteriologists and scientists render valuable services in laboratory work—in the discovery of causes of diseases and contagions, and in the compounding of medicines that will cure, and in the preparation of serums that will render persons immune from attack. In Panama, a Gorgas had to conquer the mosquito before a Goethals could conquer Culebra.

"But what about the preacher?" some one may ask; "surely he can not be classed as a wealth-producer." Why not? The function of the minister is akin to that of the physician; the latter eradicates diseases of the body, while the former administers to ailments of the soul. Shall the man who instills into youth the moralities be considered

of no economic value? Then, again, the minister must be considered an economic factor because he satisfies a desire or need. Religion to the average person is a necessity and affords greater happiness and consolation than all the arts, sciences and economies. The preacher builds character, the very corner-stone of all economic superstructures. The minister, then, also comes under the head of efficiency method number 9, and treats psychical and other influences of a deleterious nature affecting the laborer.

The teacher, from an economic point of view, indirectly, and, in a great many instances, directly, plays a stupendous part in the general enhancement of industrial and commercial life. Included in this classification are instructors in physical and manual training. It can readily be seen how vocational training, which is becoming more and more in vogue with passing years, leads to more direct results in efficiency methods. The teacher combines the functions of the preacher, to a certain extent, with the scientific manager. He inculcates principles of self-reliance and manly virtue, and educates and trains the youth in practical branches of learning. The teacher also, through his superior knowledge and culture, should educate his pupils to a broader understanding of the general principles governing economic life, and thereby produce a melioration of industrial environments. The efficiency methods of the teacher, therefore, may be classed under the sixth, ninth, tenth and fifteenth divisions, and, in specific instances, his teachings may affect any other method.

The musicians—the mere mention of them in connection with business affairs no doubt causes an agitation of the risibilities—are also here. It has recently been proven that music has a sort of lubricating effect upon the “living” machinery. A number of firms have introduced various forms of music in their plants for the benefit of their employees, while one proprietor, according to reports, went so far as to engage an orchestra to play at stated intervals. At these times operation of the plant would be suspended, and the girls employed would join hands and dance to the musical strains provided by the orchestra. It is found that these exercises tend to relax both the mind and body and that they are conducive to more friendly relations between the employer and the employed. Then, considered generally, who can tell what “savage breasts” a Lind or a Patti has soothed into calm and peace? The economic function of the musician would seem, therefore, to come under two heads, the sixth and ninth, the augmentation of labor and the removal of deleterious influences.

The actors, playwrights and other exponents of the histrionic art may not have a direct influence on the so-called economic activities except in particular instances, yet the art of Shakespeare and all the brilliant train of dramatists has entertained and inspired millions, and no doubt given them a more cheerful outlook on life in general. But, aside from this, out of the art has arisen temples to Thespis in every civilized land, thereby providing employment for myriads of artisans and artists, as well as employees.

The playwrights and players produce a great variety of things theatrical—dramas, tragedies, comedies, problem plays and those dealing with great moral and social questions. While the first three classes of histrionic productions may not have any special bearing on *res* economic, the others do, in some degree at least. Great artists, touched with "divine fire," can, in depicting and visualizing phases of life affecting the humanities or social or political problems, imbue their auditors with the love of truth and justice and all that waters and causes to blossom anew the mercies and moralities of men.

The stage, therefore, is represented in the economic superstructure under efficiency methods numbers 1, 9 and 15 (creativeness, eradication of deleterious influences and melioration of environments).

With the playwrights and representatives of the thespian art may be classed, in a general way, all authors, writers and orators. All of these classes have a powerful influence for good, and (sad to relate) evil. Knowing their power, they should have a care, for it may be that, instead of meliorating the conditions under which men struggle, through their presentations and discussions, these conditions may become more insufferable and intolerable. Of course didactic writers have a wider scope and may deal with any of the fifteen methods of efficiency.

The psychologists, phrenologists and physiognomists may be grouped together, and, as far as their direct influence on economic life is concerned, the term "applied psychology" may be used. Hugo

Munsterberg, in his "Psychology and Industrial Efficiency," says a new science is developing between the modern laboratory psychology and the problems of economics. The objects of the new science are twofold—to analyze definite economic tasks with reference to mental qualities which are necessary or desirable for them, and to find methods by which these mental qualities can be tested.

The direct application of psychology to industrial life has been made by Harrington Emerson, F. W. Taylor and others, with remarkable results. Most thoughtful readers are familiar with their efficiency methods and the results of their experiments need not be recited here. This phase of economics is an interesting one, but it still remains to be determined to what extent it is practicable to introduce these methods into the general economic life. Whether it is best to sacrifice or subordinate all the qualities that enter into one's personality for the sake of "efficiency," is a moot question.

These efficiency methods have principally to do with labor-augmentation, and therefore are embodied in our sixth efficiency method. Of course, in its broadest application, psychology, or the science of the mind, has a direct or indirect concern with the entire gamut of ideaistic production, and it will not be necessary, therefore, to classify the exponents of this branch of science in their economic application.

We now come to the formative or fine arts—architecture, sculpture and painting, and their representatives in the architect, sculptor and artist. It is not necessary to deal with these from the prac-

tical angle, for the architect, painter, etc., are recognized factors of production, as much so as the carpenter or bricklayer. We are only concerned with the æsthetic phase or aspect, and, as it has previously been shown that beauty and other similar qualities have an economic value, it will be necessary to elaborate only one or two points.

One can readily understand how (and history confirms the assertion) the development of these formative arts lead to a maze of dynamic structures and groups of architectural wonders. From the arts of the Greeks and the Romans came the Acropolis, the Parthenon and the Pantheon and the marvelous cathedrals of later times. The modern world has its examples in nearly every country—in Paris, Milan, Vienna, St. Petersburg and in numerous cities in the Americas, North and South.

The economic functions of this group will naturally fall under the first and fourteenth divisions—the creative (in its specialized sense) and the making of a better or more attractive product.

Allied to these are the decorative artists, designers and the like. These create new designs and models pleasing to the æsthetic taste, and naturally play no small part in industrial life. In addition to embodying efficiency methods numbers 1 and 14, they also embrace number 13 (advertising); namely, as window decorators, sign-painters, etc.

The initial function of the civil engineer is to remove deleterious influences in land (efficiency method number 10). This deleterious influence consists of undivided land; *i. e.*, a condition of "conglomerate mass," and it is expedient that experts

be called into service whose specialty is "land division," to avoid disputes between adjoining property-owners. This latter possible condition is embodied in efficiency method number 12 (external obstruction, or "disease," in operation).

Civil engineers employed in large industrial and commercial enterprises employ other "expression forms" or efficiency methods. In laying out a railroad line, for example, they frequently "save labor" (number 2) and "save material" (number 3) by eliminating curves, tunneling, etc., and, in industrial pursuits, not only show how labor and material can be saved, but also recommend ways of "speeding up" machinery (number 7, material-augmenting). In addition to these results, in many instances efficiency method number 5 (time-saving) is also brought into play. The elimination of a curve, for example, in a railroad not only saves labor and material, but also saves time in the operation of the trains.

"Efficiency engineers," of which we read so much in these latter days, lay particular emphasis on "speeding up" laborers (efficiency method number 6). They also give expert advice in saving and augmenting material (numbers 3 and 7), and in eliminating deleterious influences in the material of a plant (number 11).

Meteorologists, whose economic exponents are the members of a weather bureau, perform a very valuable service in preventing waste in land, or land products, in material and in labor. By predicting storms, tornadoes and other meteorological disturbances, ship-owners, sailors generally and agricul-

turists are enabled to protect, in some degree, their property from loss. The science has not been perfected as yet, and probably never will be, for the reason that the atmosphere and other elements entering into the causation of weather are very unstable and uncertain quantities.

The economic functions of the meteorologist may be classed under efficiency methods numbers 9, 10 and 11 (eradication of deleterious influences in labor, land and material), in consideration of the fact that prevention is tantamount to a cure. If a person or thing is prevented from being destroyed by a storm, the existence of that person or thing is spared, which, of course, is equivalent to being cured of a fatal ailment or defect.

The physicists, through their investigations into the natural properties and latent forces of material things, have laid bare principles and powers, the results of the application of which to industrial life are seen in the world to-day. From Archimedes to Edison, Marconi and Roentgen, a numerous galaxy have, by their researches, revealed the hidden forces of nature, all of which have contributed to the development of economic life.

All are familiar with the five mechanic powers—the lever, pulley, wheel, inclined plane and screw—without which the man-made earth would not move. On top of these were discovered the principles of statics and dynamics as applied to liquids and gases, and then came Franklin toying with a kite suspended in the clouds, from which he drew an electric spark that indirectly led to subsequent electrical discoveries that have transformed the world. This

was followed by the discovery of the vibratory nature of sound, and from the two discoveries have evolved the wonderful telephone and allied inventions, the phonograph and modifications, musical and entertaining.

The physicists, by calling to their aid higher mathematics, have computed the strain and stress, resistance of various kinds of compression, bending, crossbreaking, twisting, etc., of materials used in the arts and manufactures, enabling the practical builders to select the best kinds of materials, in reference to service and economy, for their particular work. The physicists also compute the inherent forces of liquids and gases, static and dynamic, by means of which enormous weights are lifted, and boats, railroad trains and motor vehicles of all kinds are propelled swiftly over the earth, through the water or in the air. The various kinds of powers used include hydraulic and hydrostatic, expansion of steam and other gases, and turbine (water and gas). By the application of the static pressure of gas in the invention and manufacture of the air-brake, the rapid running of railroad trains has been made comparatively safe. By the aid of these forces mountains are tunneled, rivers spanned and canals dug, and the desert is made to blossom as the rose.

The marvelous things performed by electricity are of common knowledge. How it eliminates time and space in carrying our messages across land and seas; how it lights and heats our buildings and illuminates our public ways; how it turns the wheels of manufacture in a thousand industrial

centers, and propels cars and all sorts of motor vehicles carrying tremendous loads with perfect ease—all know, if they do not understand. While the physicists did not apply these forces to the work of modern life, yet they revealed and laid bare these, the tools of industrialism, at the feet of the inventors and captains of industry.

There are three forms of electricity which are used in medicine—static, galvanic and faradic. The static form modifies and regulates functional processes, including respiration, circulation, nutrition and the secretions. Galvanism is applied to the treatment of many conditions and diseases of the nervous system, and is also of the greatest use in the diagnosis of disease. In surgery, it is applied to the destruction of tumors and growths of a similar nature. Faradic electricity is useful in cases of paralysis, gout, rheumatism, eczema and hypochondriacal manifestations.

The microscope and its application to photography has been of untold benefit in bacteriological investigations appertaining to both animal and vegetable life.

The culture of plants under electric stimulus is a subject of interesting experimentation. It has been found that by the application of electric light, by means of arc-light or ultra-violet rays, the flowering period of plants is hastened, in some instances, as much as ten days, and it is believed that the practical utilization of electric light in horticulture will prove of great service to florists and truck farmers.

Electro-chemical processes are employed in ex-

tracting metals from their ores, and in parting them from their alloys; in the deposition of certain finer metals upon the surface of baser metals and other materials, and in the manufacture of chemical products employed in the arts.

Radium and other radio-active elements recently discovered are destined to play an important part in surgery and the practice of medicine. The Roentgen rays, by revealing hidden lesions, growths and fractures, have already rendered invaluable service to the medical science, and now comes the report from Germany that mesothorium is a panacea for cancer. This radio-active substance is obtained from thorium waste in the manufacture of gas mantles. For therapeutic use a tiny particle is enclosed in a silver covering pierced with minute holes. Recently it has been asserted with more or less positiveness that radium is curative for some forms of cancer.

It will be seen that the physicist covers a wide field in the industrial world, and, directly or indirectly, affects production under the following efficiency heads: First, second, third, fourth, fifth, eighth, ninth, tenth and eleventh.

The activities of the chemists are so varied and widespread that it will be difficult to do them justice in a work of this kind. The chemist, by deep research, discovers and compounds formulas useful in the arts, professions, agriculture and manufactures, and the joint work of the chemists and bacteriologists have done much toward the alleviation of human ills.

Applied chemistry, with which we are more par-

ticularly concerned, comprises all the facts and methods of the science that finds practical employment, and includes the biological treating of physiological and pathological phenomena in animals and plants, and with the uses of chemical discoveries in the arts and industrial pursuits.

A very interesting and valuable phase of the chemists' activities has been in the direction of discovering new elements, of which there are now known to science upwards of eighty, although a few of the more obscure elemental substances are subject to dispute. After exhausting all of their resources in the way of chemical analysis, the scientists brought into play the spectroscope, and by means of that wonderful instrument were able to draw from out of the depths of space a number of additional elements.

Agricultural chemistry deals with problems of the soil, nutrition of plants and animals, the composition of their products and their value as food. It has laid the foundation for the science of agriculture leading to the establishment of agricultural stations and schools, in the laboratories of which plants and soil are analyzed to determine what elements are needed for their fertilization, and many valuable discoveries have been made along this line. The field covered by this method of analysis has not always been strictly chemical. For example, the discovery of the fertilizing properties of leguminous plants, clovers, peas and the like, through their ability to appropriate to their use free nitrogen of the air was discovered by a German chemist and bacteriologist, who also discovered the agency of

bacteria in bringing about assimilation of elements needful to plant life.

Medical and physiological chemistry plays an important part in the development of general knowledge of bacteriology and infectious diseases. The small organisms which are responsible for the various infectious diseases owe their action, in great part, to specific chemical poisons which they produce. Antitoxins have been discovered by which immunity can be secured or a remedy provided.

As applied to manufactures, chemistry covers an extensive field. There is hardly an article in use which has not been treated chemically in some stage of its manufacture. The discoveries of new compounds and processes by analytical and synthetic methods have, in a great many instances, revolutionized industrial life. For example, coal tar, which was at one time discarded as being of little worth, has been found to be the source of almost an endless variety of compounds of the most antithetical character. From it has been abstracted the most brilliant of colors and the most delicate of perfumes; also medicines and antiseptics; gases which propel motor vehicles, and the substances from which the road over which the vehicle runs, are made. A partial list of the compounds derived from coal tar include paraffin, naphtha, benzol, creosote, anthracene, carbolic acid, naphthalene, pitch, coal-tar dyes and medicines without number, artificial perfumes, and from it asphalt and preservative compositions for wood and metal.

In the industrial world of to-day synthetic indigo has displaced the indigo secured from the plant;

synthetic camphor, that produced by the camphor-tree, and the aniline dyes of many hues, the old madder dyes. Many other commercial products are being superseded by better and cheaper ones produced in the laboratory of the synthetic chemist.

Thermo-chemistry treats of thermal phenomena accompanying chemical reactions or transformations. While these manifestations are caused partly by chemical changes proper, they may be due in part to purely physical changes that frequently accompany chemical reactions. Thermo-chemistry has accomplished the measurement of heat in various chemical transformations, and the principles of thermo-dynamics have been successfully applied to the consideration of chemical changes. Thermo-dynamics is the application of the principles of mechanics to heat phenomena. This branch has been very useful in calculating heat and power forces of solids, liquids and gases as adapted to industrial life.

Metallurgical chemistry is a branch of metallurgy, which has for its object the preparation of metals from their ores. The operations are partly mechanical and partly chemical. The processes of extraction of metals from ores include smelting, amalgamation (with mercury), extraction by aqueous compounds in which metals are dissolved by chemical solutions and precipitated, and electrolytic. By the latter method a metal is separated from its impurities by electrolysis. Notable discoveries which have revolutionized industrialism include the Bessemer and open-hearth processes of making steel, and the electric furnace.

Of the fifteen methods enumerated by which mind creates wealth in the economic world, chemistry affects over one-half; namely, the first, third, fourth, sixth, seventh, eighth, ninth, tenth and eleventh.

Having found, in a tentative way at least, a place on the economic stage for some of the more prominent classes of mental workers not directly connected with industrial life, we now come to the last, and possibly the greatest, class—the governmental, embracing its three powerful arms, the administrative, judicial and legislative. The importance of the functions of the inventors, discoverers and entrepreneurs demands treatment in separate chapters, inasmuch as they are more directly connected with industrial and commercial processes.

It is apparent that the principal function of a government, whether it be national, state or municipal, is to enhance economic life or to meliorate its environments. But alas! (as is said of the Supreme Ruler of the universe) if it has the power to give, it has also the power to take away. All are familiar with industrial panics and depressions which have resulted from the enactment of ill-advised legislation.

Primarily, of course, the function of a government is to protect its citizens and to see that justice is done between man and man, individuals and corporate bodies, corporations and corporations, and between one government and another. The protection of citizens includes the conserving of health and morals as well as the guarding against illegal encroachments relating to personal or property

rights. Aside from the humanitarian point of view, it is essential, as a matter of protection, that citizens be shielded by law from contamination by immoral and unsanitary agencies.

In order that a government may protect its subjects it is necessary that it be empowered to enact legislation for the collection of revenue to defray the legitimate expenses of the commonwealth. This is done by direct and indirect taxation. While both forms of taxation have an important bearing on economic life, the tariff, a form of indirect taxation, over which there is unending dispute, plays by far the greatest part in the industrial world. The legislators of a country have a stupendous task set for them in the consideration of revenue laws, for it is very vital to the interests of a people whether such laws are based upon theories of free trade, tariff for revenue, or protection.

But in these days of sharp international competition for commercial supremacy the functions of a government should not stop at the mere passage of laws and their just and equitable enforcement. It is essential that foreign commerce be promoted, and, in doing so, the officials of a country, both at home and abroad, should exert their powers to the accomplishment of three desiderata: the encouragement of cordial relations between the home and foreign governments; the careful study of the economic needs of the countries, in order that a reciprocal benefit may accrue; and to enhance international commerce means should be supplied for the rapid and economical transportation of the commodities to be exchanged. To this end it is expedient that

a merchant marine be established, by governmental subvention if necessary.

The United States, as well as other countries, has been slow in recognizing the importance of at least two of these methods of promoting commerce; namely, the first and the last. For example, there has been too much bluster and unsisterly conduct from certain quarters towards our sister republics of the South. It seems plain, too, that it is just as important to secure means of transportation over great international highways as between state and state. It is futile for our agriculturists and manufacturers to produce goods if there is no way to get them to the ultimate consumer.

It is also questionable if one of the proper functions of a nation is not found in the promotion and fostering of industrial life by scientific investigation and research along the lines which Germany has initiated. The latter government has promoted chemical investigation by opening chemical laboratories for experimentation, until her chemistry industry has become the foremost of the world. By discovering economical methods of extracting sugar from beets, she has developed an industry in that line which has displaced, to a considerable extent, the cane sugar of the West Indies. While Germany has done much towards promoting the manufactures, she has not recognized the necessity of fostering individualism, for which England has set the example.

A prerogative of government which has been sometimes overlooked, particularly by municipalities, is that of beautifying and rendering more attractive cities, as well as rural districts. This nation has

done excellent work in this direction by setting aside scenic sections of the country as national parks. It is important, not only from an æsthetic, but also from an economic, standpoint, that cities establish elaborate systems of parks, connected by boulevards, and to see that the public buildings are of pleasing architecture and the streets well paved, well kept and well lighted.

The Constitution grants Congress, with the approval of the President, the following powers for the conserving of peace and the promotion of the general welfare: To borrow money on the credit of the United States, to raise and support armies, to provide and maintain a navy, to grant copyrights and patents, to establish post-offices and roads, to constitute tribunals inferior to the Supreme Court, to provide punishment for counterfeiting, etc., to make rules for the government and regulation of land and naval forces, to regulate commerce with foreign nations and among the several States and with Indian tribes, to coin money and regulate the value thereof, to establish a uniform naturalization law and laws on the subject of bankruptcy, to define and punish piracies on the high seas and offenses against the laws of nations, to declare war, to lay and collect taxes and duties, imports and excises, to pay debts and to provide for the common defense and general welfare, to provide for the calling forth of the militia to execute the laws of the Union, suppress insurrection and repel invasion.

The greatest constructive forces contained in the powers ascribed to Congress are those providing for the establishment of post-offices and roads, for

the facilitation of commerce, for the coining of money, for the collection of taxes and for the promotion of the general welfare. All of these meliorate economic conditions by supplying means for interchange of commercial products and messages. Roads are being superseded in a degree by steam and electric railways, and it is important that these should be encouraged and aided, and, at the same time, regulated. It is also needful that currency, the blood of the nation, should be kept free from all forms of impurity and instability and rendered elastic and mobile.

The President, in addition to other executive duties, has the power, with the aid of the Senate, to make treaties with foreign nations. This has a very real bearing on economic life in that it affords a very effective means for promoting cordial relations between nations and for facilitating exchange of commercial products.

The President also appoints the various secretaries of the Cabinet, who assist him in his executive duties. The Secretary of the Interior has charge of public lands, including mines, superintends the issuing of patents to inventors, collects statistics and facts showing the condition and progress of education, and publishes such information as may assist in the improvement of education throughout the United States. All of these powers, economically considered, are very far-reaching.

The Secretary of Agriculture collects information and makes scientific investigations as to the diseases of plants and animals and methods of cultivating and increasing the fertility of the soil,

etc. It is readily observed that this department affects economic life to an incalculable extent, if the dissemination of the information at the disposal of the bureau is effectively done.

The Department of Commerce and Labor promotes trade and the conditions of the workingman. All of this is very essential, but just why industrial affairs in general should be overlooked, is not clear. Is it not just as needful to promote the manufactures as agriculture, and is it not reasonable that the Government should pick up the skeins of the industrial fabric where of necessity the captains of industry are compelled to drop them, and help weave a more perfect and greater product? Other countries do this—notably Germany and Japan—and their great industrial expansion can be attributed, in a great measure, to this governmental nourishing and care.

It is not necessary to dwell upon the functions of the courts and the general police power of a nation. It is their duty to adjust difficulties (to prevent friction among the parts of the great economic machine). Just as a passing reflection, for the benefit of those who may still doubt that a government can meliorate economic environments, what would be the natural result should the local stable government be exchanged for the catch-as-catch-can species of rule in Mexico?

The armies and navies meliorate economic conditions, first, passively, by exerting and supplementing great moral pressure for peace and righteousness, and, second, in defending a country against internal and external attacks.

It is not possible to take up and discuss all or any part of the various forms of State legislation looking to the melioration of economic environments and conditions. A large number of laws have been enacted by some of the States in an endeavor to better industrial conditions, such as sanitation laws, with special reference to factories where many employees are to be found, minimum wage laws, and acts regulating the employment of children and hours of labor and the giving of pensions.

Other functions inherent in a government consist in the reclamation of waste lands and the conservation of national resources. The promotion of public works, as, for example, the Panama canal, demands at least a passing mention. As the latter engineering feat comes under the head of time-saving devices, we have, in summing up, the functions of a government classed, theoretically or essentially, under the entire fifteen heads.

Other governmental questions, such as Socialism, Single Tax, Physical Valuation and Conservation, will be discussed in succeeding chapters.

VI.

INVENTIONS AND DISCOVERIES.

The inventors, discoverers and investigators of various kinds, who reveal and co-ordinate the forces and secrets of nature, have given the wheels of the industrial world a tremendous impetus within the past century. While there have been great discoveries in all lines of human endeavor, nevertheless the nineteenth century will be known above all else as the era in which electricity was harnessed and developed commercially to a point undreamed of by the wildest visionary. The story of Aladdin, who, with the aid of a lamp and a kindly genie, could hear voices thousands of miles away, and who could annihilate time and space, has been paralleled in every-day life, and the half has not yet been told. Neither will it be forgotten that the century also saw the development of the application of steam to commercial and industrial life, and, further, that, by calling to its aid shell-resisting steel and armor-piercing explosives, naval warfare has been revolutionized. And it must be admitted, speaking economically or uneconomically, that this piling of Ossa of resistance upon Pelion of attack makes business *gescheft* for the producers of these weapons of war.

There are innumerable varieties of inventions and discoveries. Some of these can be patented,

but a larger number are not patentable. The patent laws of the United States permit any one who has invented or discovered a new or useful art, machine, manufacture or composition of matter, or any new and useful improvement thereof, not known or used by others in this country, to protect such inventions or discoveries with patent rights.

It will be seen that patents apply to processes and material things, while the term invention or discovery, properly speaking, may be applied to new and better ways of doing things.*

The successful business man discovers continually many new and better methods of carrying on his business, which are economically very valuable, but which are not patentable. The abstract forms of inventive expression will be treated more exhaustively under the head of "Entrepreneurs."

In a work of this kind it is not practicable to go into a thorough study of inventions and discoveries or to present a catalogue of even a minor part of them. It will suffice to name a few of the most important and to determine in what manner they affect economic life. It will be conceded, without argument, that they influence industrial activities in all of the fifteen ways under which a general classification of "expression forms" has been made.

The *Scientific American* recently published the results of an "invention contest" in answer to the question: "What are the Ten Greatest Inventions of Our Time?" The prize-winner, Mr. William I.

*A patent may not be obtained for a principle, idea, law of nature, natural force or scientific truth.—*Federal Statutes*—Annotated, Vol. V., p. 428.

Wyman, named the following, with the dates of their successful commercial introduction: (1) Electric furnace, 1889; (2) steam turbine, 1894; (3) gasoline automobile, 1890; (4) moving pictures, 1893; (5) wireless telegraphy, 1900; (6) aeroplane, 1906; (7) cyanide process, 1890; (8) linotype machine, 1890; (9) induction motor, 1890; (10) electric welding, 1889.

Other contestants named the manufacture of acetylene gas from carbide, calculating machines, Burbank's discoveries, color photography, concrete (reinforced), dictagraph, Diesel engine, dirigible, electric car, fixation of nitrogen, flexible photo films, high-speed steel, incandescent electric light, internal combustion engine, liquid air, mercury vapor lamps, monorail, Pasteur's principles, phonography, photo-engraving, pneumatic tire, radium, submarine boats, electrical transmission and transforming alternating currents, Tungsten lamp, Welsbach burner, wireless telegraphy, X-ray machine.

The *Scientific American* also published a description of an electric hotel planned for Paris by M. Georgia Knap, the inventor of an electric house. In this hotel all of the apparatus required for the service of the restaurant and bedrooms is arranged so conveniently that the operator can promptly supply the needs of any guest by pressing a few electric buttons. With the electric system, which is centralized in the basement, only ten seconds are required to carry breakfast or the morning mail up to guests on any floor.

When a guest awakes in the morning, his first desire is to know what time it is. Without rising,

he touches a button at his bedside and immediately the time appears on a large, luminous dial projected on the ceiling. If it is time to begin the new day, another button is pressed and a voice, issuing from an electric chandelier, asks what is wanted. The guest, still lying in bed, calls out, "Open the curtains and shutters—let in the air; it is too warm. Send me a cup of coffee and my letters," etc. These orders are promptly obeyed. The curtains and shutters open and flood the room with light. The top of a chiffonier, placed beside the bed, turns and extends itself over the bed to form a convenient table. The breakfast and letters appear on the chiffonier, and, in less than a minute, all of the guest's desires are satisfied.

The restaurant of the hotel is served in the same manner. Each small table, for two or four persons, is provided with a dictagraph, which is placed in the lamp-shade. You touch a button, and a voice from the lamp-shade asks what you wish. You give your order, without putting your mouth to a telephone. A silvered platter in the center of the table sinks and presently reappears, laden with the food you ordered. As soon as you have helped yourself, the platter again sinks, and within twenty seconds returns with the dishes ordered by your companion. The plates are changed in a very practicable manner by means of little dumb-waiters with shelves. By the use of these ingenious contrivances one waiter located in the basement can quickly serve forty guests.

Returning to the ten greatest inventions named by Mr. Wyman, the prize-winner, we quote his analysis of the wonders:

"The electric furnace, through the generation of a heat so intense as to simulate some of the primal forces of nature, has produced, for the first time, many absolutely or commercially new products. It can make artificial diamonds and other gems; it is the only means for commercially producing carborundum, the hardest of all manufactured substances, calcium carbide (the source of a valuable illuminant and nitrogenous fertilizer) and artificial graphite, which is finding extended use in the arts; and it has converted aluminum from a merely precious to a very useful metal and reduced its price from \$12 a pound to less than twenty-five cents. It is responsible for all methods of fixing nitrogen, which, in view of the approaching exhaustion of the natural supply of Chile nitrate, obviates a possible nitrogen famine, and alone makes this agency of inestimable service to mankind.

"The electric furnace is radically transforming the steel industry. It produces steel of crucible quality with almost open-hearth economy, and, for the first time since 1740, the expensive and intricate crucible process finds a competitor. In providing rails and heavy-service steel of crucible characteristics in texture and toughness, at slight increase of cost over the comparatively impure and unreliable older products, a revolution of astounding proportions is going on before our very eyes.

"The greatest agency in the service of man is the steam-engine. No other device has been so studied, improved and super-refined. But its usefulness reached its limits when it failed to satisfy the

enormous greed for power demanded in electrical generation and ship propulsion. The steam turbine solved the problem, and the reciprocating engine, which has borne the brunt of the world's work during its century's primacy, has all but been eliminated in these two vast fields.

"The turbine has effected striking economies in steam consumption, attendance and installation. It has abolished pounding and vibration, eliminated cumbersome and expensive foundations, reduced the space occupied from one to two-thirds, and made it advisable and economical to send efficient but older types of equipment to the scrap-heap. Six million horse-power were employed in turbine-driven ships in 1910, and a like amount is used in the turbo-generators in this country alone. The days of the reciprocating engine are almost numbered—the electric motor is driving it out of the factory, and the generation of electricity requires turbine installation. Such is the vast extent of the revolution now being effected in our basic engineering art by the steam turbine, invented by Parsons in 1884, but not recognized as a commercially practicable proposition until ten years later.

"The inventions of this period which have worked the most rapid alteration in the intimate affairs of life are the gasoline automobile and the moving picture. The 'auto' in this short space of time has developed from a mere experiment to the making of one of our largest industries, has caused the creation of thousands of miles of improved highways, has almost abolished horses in the cities, has changed to a marked extent the manner of

living of an appreciable portion of our people, and has directly induced extensive and radical improvements in, and created, dozens of collateral arts.

"Superficially the 'auto' appears to be the sum of a series of engineering developments in which great inspirational achievements were wanting. But no fact is plainer than that its introduction was neither casual nor fortuitous; the whole history of the century's endeavor to provide a practical self-propelled car proves that the success of any type that at once answered the requirements would be immediate. Such success did come with the Daimler motor, and not before. The distinctive features of this motor were lightness and speed, but these were precisely the factors that differentiated it from its predecessors and that peculiarly adapted this engine for its specially designed purpose.

"The moving picture has transformed the amusement of the multitude and promises a future so enormous that only its present swift development can give faintest indication of. Offering the first serious check the theater has suffered since Shakespeare's time, its ramifications are becoming more varied and extended. As a factor in education, science, trade, and in recording current history, it has seen its beginning only, and in its application to amusement in its higher form we already have a promise of a large and brilliant future. The kinetoscope of Edison was the first commercial appliance to show pictures in natural movement, although he owed much to the Eastman film and prior investigations. As with the automobile and aeroplanes, great credit must be given to French

promoters for first showing its possibility on a large scale.

"Next to the philosopher's stone and perpetual motion has man's attempt to fly been the object of most persistent pursuit. No other problem in the realm of invention has caused such heart-breaking discouragement or called for such sacrifice of life. In spite of authority, however, the quest of the flying machine was not chimerical, although it seems but yesterday since success capped the efforts of the Wright brothers. Although the aeroplane is radically transforming military tactics and as an engine of war can not be ignored, it presents the least commercial utility of all inventions considered. But because it is, in many respects, the most radical innovation in the whole history of locomotion and because the perfection of this device opens up possibilities dazzling to contemplate, present utility must be ignored in praising this striking accomplishment. It is only necessary to imagine a condition where frontiers are eliminated, valuable rights of way unessential, and fortresses and battle-ships impotent, to realize the overwhelming revolution which will come with the perfecting of air navigation, an outcome by no means beyond the limits of possibility."

Since the above was written, the announcement has been made that Orville Wright has invented a "stabilizer," which renders the aeroplane comparatively safe or "fool-proof."

"If the aeroplane is the most spectacular achievement of this age, wireless telegraphy appeals most to our imagination and dramatic sense. Its impor-

tance and significance, however, are in direct proportion to the hold it has on our interest. The scheme of transmitting intelligence was never complete so long as ships at sea and remotely situated stations could not be communicated with. 'Wireless' supplied this missing link and made intercommunication as universal as the world is wide. In the short fifteen years since its introduction by Marconi, wireless apparatus has become part of the equipment of every modern sea-going and naval vessel, has been placed in hundreds of government establishments and dozens of relatively inaccessible stations, has become an important factor in military and naval operations, and, most important of all, has robbed the sea of its terrors, and saved thousands of lives through its operations.

"The cyanide process has been one of the main agencies whereby the production of the world's gold was trebled between 1890 and 1908. Patented in 1888 by McArthur and Forest, it was first introduced on a large scale at Johannesburg in 1890, and is now universally established. The process has revolutionized the art of metallurgy of the precious metals, but its indirect economic and social influence has been comparatively greater than its direct result in creating wealth, wide and deep as has been its application in other directions than gold extraction. Gold is the life-blood of trade, and whether or not one believes its increased production is the cause of the high cost of living, there can be no question of the profound effect the quantity of gold in circulation has upon commerce and economic structure, and, consequently, of the vast significance

of the invention to which such increased production is largely due.

"Ninety per cent. of electric current generated is alternating because larger generating units can be utilized and the current more easily transmitted. The induction motor, constructed by Tesla in 1888, and independently suggested in principle by Ferarri, was the first satisfactory medium to transform this current into power. This epoch-making invention is mainly responsible for the present large and increasing use of electricity in the industries. It is working a revolution for economy and comfort in the mill, factory and workshop. In making the motor an individual power unit, it has made power arrangement elastic, drawing upon energy only when needed and applying it directly only where wanted, and has abolished line shafting and belting. It conserves thirty to sixty per cent. of energy formerly wasted in uselessly whirling line shafting. It saves overhead space and increases productivity by making the shop lighter, safer, cleaner and less noisy. And so well recognized are these advantages that establishments in every big industry are installing these motors as a measure of economic defense.

"The 'art preservative of all arts,' in the department of composition, remained the same in all its fundamental particulars for four centuries after Gutenberg first set movable blocks to form a printing surface. The most intricate devices ever evolved and the most ingenious efforts ever expended failed to successfully supersede hand composition until Mergenthaler's linotype machine established its feas-

ibility about 1890 and entirely overcame public skepticism and inertia a few years later. It is enough to say that an operator can set from five to ten times faster than the average hand compositor, that the type composed always presents a brand-new face, that the cost of foundry type and auxiliary paraphernalia are dispensed with, and that distribution of type matter is abolished, to recognize the breadth and thoroughly revolutionary character of this invention, and to appreciate why every newspaper and large printing plant in the world has installed machine composition.

"Electric welding in the form in which the art first received commercial recognition is the invention of Elihu Thompson. The art of the smithy, whose annals fade back into prehistoric times, underwent its first radical change in its entire history with the introduction of this invention about a quarter of a century ago. It has not only transformed one of the oldest of arts, but is performing what has never been thought possible in this art. This device not only joins previously considered 'unweldable' metals, like brass, bronze, cast iron, etc., but different and weldably antagonistic metals can be united in a solid union. Shapes so intricate as to be beyond the capacity of welding by any previous device or process, or which could only be joined by riveting, are readily united by the electric welder. The applicability of the process to practically all metals, the dispensing with heavy pressures, the surety and swiftness of results, and the economy and cleanliness of its working, made it a startlingly successful proposition from the very

first, and now its application is as broad as the metal-working industry itself.

"Of all the great achievements of this period, these ten have been chosen because they are pioneers of the highest order and have been most revolutionary in the most potent fields of service to mankind."

We have quoted the *Scientific American* article rather freely, not only because of the admirable selections made by Mr. Wyman, but also because of his lucid and graphic exposition of the economic merits of the ten inventions enumerated. The inventions cover a diverse field in their application to industrial as well as general pursuits, and before proceeding any further an attempt will be made to classify them in reference to the fifteen "expression forms" or "efficiency methods."

First, by means of the electric furnace, diamonds and other gem substances can be made. This comes under the head of efficiency method number 7 (material-augmenting), as it increases the value of products. Second, substances, such as carborundum and carbide, open up new projects for exploitation (number 1), and save material (number 3) by substituting something better and cheaper; and augment land (number 8) by means of nitrogenous fertilizers; and saves labor (number 2) through the manufacture of steel more economically, and again augments material by the manufacture of heavy-service steel at a slight increase in cost.

The gas turbine saves material (number 3) by eliminating expensive foundations; and augments material (number 7) by reducing the space occu-

pied; and eradicates deleterious influences in material (number 11) by abolishing poundings and vibrations. In doing away with these distracting noises it would naturally also remove deleterious influences in labor (number 9).

The gasoline automobile creates a new enterprise (number 1), saves labor (number 2), saves time (number 5), and otherwise facilitates intercommunication by promoting good roads.

The moving picture creates a new field of industry (number 1), and may enhance any of the efficiency methods by educational films. For example, it may promote efficiency in the laborer (number 6), and eradicate deleterious influences in the laborer (number 9) through the exhibition of educational and entertaining films. Nearly all recognized efficiency methods, including the elimination of useless motions, are now being studied by means of the moving picture.

The aeroplane opens up a new economic world (number 1), saves material (number 3), it needs no tracks, saves time (number 5), and may meliorate economic environments if, through its perfection, war is made practically impossible.

The wireless telegraph creates a new field (number 1)—intercommunication between moving trains, vessels, etc. Its greatest triumph lies in its power to save life on the great ocean greyhounds. It saves labor (number 2), saves material (number 3), saves time (number 5), eradicates deleterious influences in the laborer (number 9) by "robbing the sea of its terrors," as in the "Titanic" and "Vultarno" disasters.

The cyanide process augments materials (number 7) by increasing the output of the precious metals, and meliorates (or contrariwise) economic environments by increasing the "life-blood" of trade—money in the shape of gold.

The induction motor, by concentrating power, saves labor (number 2); saves material (number 3); saves time (number 5); augments material (number 7) by economizing space, and removes deleterious influences in the laborer (number 9) by "making the shop lighter, safer, cleaner and less noisy."

The linotype machine saves labor (number 2), saves material (number 3), by eliminating foundry type, etc., and indirectly created a new industry (number 1) by the impetus it gave to the publishing business.

Electric welding creates new industries (number 1) by performing what has never before been possible: welds "unweldable" materials and also permits welding in previously impossible ways and conditions; saves labor (number 2), and saves material (number 3) by substituting something better, and augments material (number 7) by bringing into use in new ways heretofore "antagonistic" metals.

Reference has been made to the steam-engine, and it may be disposed of now in connection with its general application to industrialism and commerce. No one will question that it has opened up new fields (number 1), and what fields, farms, plantations, prairies, forests, mines, factories and scenic beauties! Neither will it be questioned that it saves labor (number 2), saves material (number

3), saves time (number 5), and, in a way, meliorates economic environments (number 15) by facilitating the exchange of products and commerce generally.

Naturally, next comes the telegraph, the steam-engine's great business partner. This also opens up new economic fields (number 1), saves labor (number 2), saves material (number 3), saves time (number 5), and indirectly meliorates economic environments through the rapid dissemination of news, and in supplementing the postal service. For all practical purposes the telephone may be classed with the telegraph.

All agricultural machines and devices, such as planting and harvesting machines, threshers, cotton-gins, etc., may be grouped together. They create new economic fields of labor (number 1), save labor (number 2), save time (number 5), augment land, in some instances (number 8), by permitting more efficient culture; and a number of them, such as weeders, sprayers and similar devices, eradicate deleterious influences in land and land products (number 10). All of these inventions are effective in stimulating agriculture.

"A machine has recently been perfected," says the *Outlook*, "which may do more for human liberation than the laws of many states or the benefactions of many philanthropists. This is the mechanical cotton-picker. The possibilities which lie latent in this bit of machinery are more credible when it is remembered a social revolution was produced by another cotton machine, Eli Whitney's cotton-gin. It is said of the earlier invention that it created the

slave power; of the latter invention, that it will wipe away the worst vestiges of slavery. It is the invention of a Scotsman, August Campbell, who has worked twenty years upon the idea. The machine he has constructed will discriminate between ripe and unripe cotton, between leaves and cotton bolls, and will injure neither the cotton nor the plant. By means of it one man can do the work of fifty pickers.

"What this machine can achieve for economy alone is astonishing. It is estimated that it will save in the cost of picking cotton annually \$180,000,000. This is, however, only a small part of the benefit it is capable of bestowing upon the country. The great part of that benefit will consist of making conditions of labor in the cotton region more humane and normal. At present King Cotton is a tyrant and exercises his tyranny at cotton-picking time. The cotton that one man can cultivate requires ten persons to pick, and the longer the ripe cotton is unpicked the more danger it runs from the wind and rain. So there is a sudden frenzied, and then subsiding, demand for labor. Children are pressed into service under the hot sun and sometimes beaten for rebelling against the hard task, and the negroes are charged with vagrancy so that the chain-gangs will be replenished for the use of the cotton planters."

The evolution of methods of lighting presents a marvelous record. The primitive torches were after a long time superseded by whale oil burnt in open vessels. This was followed some time later by the tallow candle, which in turn was supplanted

by the kerosene lamp. Later came the illuminating gas, and this, in turn, is gradually being crowded to the wall by systems of electric lighting. Each of these new methods created new economic fields (number 1), saved material (number 3), and provided a better article (number 14). The Welsbach and similar burners for gas, and the Tungsten and kindred devices for electric lights, come under the efficiency head of number 7 (material-augmenting)—increase the power of light. Incidentally, this increasing of the power of light removes deleterious influences in the laborer, by making his work less difficult.

While the inventor, under a strict classification, is not a pure exponent of ideaistic wealth, he, nevertheless, holds a prominent position in the production of dynamic wealth. In some instances he not only invents an article, but a machine for its manufacture. The ordinary pin presents an example of this kind. If we class wire as raw material, the pins are practically made independently of manual labor, being turned out and inserted in paper packages ready for sale by machinery.

There is a device for manufacturing screws which exhibits almost human intelligence. The machine seizes a rod of metal, pulls it rapidly along, gives the end of it the shape of a screw-head, cuts the thread around it and then delivers the perfect screw. When the machine has used up the rod of metal, it rings a bell for the attendant to bring more.

The Diesel engine, invented by Dr. Rudolph Diesel, is an engine which is driven by oil by means

of internal combustion, and is destined to supersede all forms of coal engines. Instead of using coal direct, the "black diamond" will be converted into gas and tar oil, the former for heating and lighting, the latter for driving engines. The tar oil will produce from three to five times as much power in the Diesel engine as the coal, from which the tar is generated, would if fed into a furnace. The inventor claims that, though all coal be exhausted, the earthnut, which can be cultivated to an illimitable extent in the tropics, will furnish an inexhaustible supply of oil.

This machine represents the creative principle (number 1), labor-saving (number 2), material-saving (number 3), time-saving (number 5), and material-augmenting (number 8), increases the power capacity of coal and other combustibles.

The electric fixation of nitrogen is a term applied to the process, recently discovered, whereby the nitrogen of the air may be utilized for the fertilization of plants. This is done by passing an electric current through air, resulting in the formation of oxide of nitrogen or nitric acid, from which fertilizers are made. This comes under efficiency method number 8 (land-augmenting).

High-speed steel is made by tempering "Tungsten" steel, from which tools are made that will cut at red heat. This has increased the cutting capacity of tools more than 100 per cent. The economic features of this invention may be classed under labor-saving devices (number 2), material-augmenting devices (number 8), and the manufacture of a better article (number 14).

The preservation of sugar-producing plants is a process by which beets and sugar can be preserved for a long time, thereby eliminating a great loss previously sustained in cases where the plants are not promptly refined. The beets, etc., are reduced to a dry powder and then shipped to a refinery in this form. This process eradicates deleterious influences.

"It is the use of machinery that is making the culture of rice in this country the wonder of the world. A comparison of the number of days' work required to produce an acre of rice in the regions where it has been cultivated for untold centuries, and in the United States, where the industry has only recently been entered upon, is both interesting and instructive. In Bengal it requires the labor of one man eighty days, and the use of a yoke of oxen twenty days, to produce an acre of rice; in Japan, without the aid of any animal, 120 days; in the Philippine Islands, practically the same as India; but in the rice-growing regions of Louisiana and Texas, with the aid of machinery, the maximum of expended time of human effort on one acre of rice is two days and the use of a team for a day and a half."—*"The New Agriculture"* (Collins), pp. 307 and 308.

The writer affirms that the corresponding amounts of production are: In India, 1,000 pounds; in the Philippines, 900 pounds; in Japan, 3,000 pounds; in Louisiana and Texas, 64,800 pounds. He adds, "What American machinery is doing in the production of rice is not unique, but typical."

The discovery of antitoxins, antiseptics and

other preventatives and cures by scientists, led by the great Pasteur, has been of incalculable benefit to industrial life. A most striking example is the solving of the yellow-fever problem, which has resulted in the saving of millions of dollars in Southern commerce. How the mosquito origin of this disease was discovered, and how this knowledge was put to practical use, is well known. The expression-forms of all of these marvels of scientific research are number 9 (eradication of deleterious influences in laborers) and number 15 (melioration of economic environments), by removing the incubus of epidemic scares.

Thus far we have cited examples of methods of increasing productivity under all of the fifteen heads, with the exception of number 13 (advertising, or the promotion of business). It will not be difficult for the reader to recall instances, striking and spectacular, wherein the ingenuity of man has aided and abetted the butcher, the baker and an endless number and variety of "makers" in advertising his wares. The streets in all of our large cities are aflame with revolving, blinking and whirling electric signs, startling, staggering and stupendously sufficient and efficient.

And, speaking of advertising, what better vehicle presents itself to the man who has something to sell than the average daily paper or popular magazine? It is not a case of running or walking and reading, as in electric signs, but of riding and reading while seated quietly in the surface, elevated or subway trains, or at your home. And the merchant who most assiduously, persistently and attract-

ively places his wares before the public is the one who garners the reward of his expenditures and labors.

It is needless to state that the printed word affects, directly or indirectly, all of the fifteen ways of increasing economic productivity. If the inventors and discoverers named deserve the eulogies awarded, what sort of praise can be given the inventor of the art of printing? Without emphasizing the manifold avenues for labor opened by the art, let us view the benefits derived therefrom from the intellectual and moral angles. If, as the old debating societies were wont to decide, the pen is mightier than the sword, what can be said of the printed word? It reaches millions, and has the power to please or oppress, to elevate or bow down, to inspire or enthrall, and it incites war and is potent for peace; it inspires hate, and is eloquent in abetting love; and through the co-operation of the telegraph, wireless and cable, lays the news of the world at our feet.

The inventor of printing, of course, is not responsible for all this. His device has made it possible for brainworkers of all times to reach the masses with greater facility. All creeds, beliefs and propagandas find means of vent through this "art preservative."

This art presents an excellent illustration of how the invention or discovery of some new process or device assists, and makes possible, the development of other arts. What chance would the publisher of one of the great metropolitan dailies have of issuing his enormous "blankets," if it were not for

the existence of scores of other wonderful products of the brain of man? Some of these are the steam or electric engine to provide power for the plant and to transport finished and unfinished products, the telegraph, the telephone, cable, etc., to carry the news, the linotype to set up the news (not forgetting the advertisements), photogravure, the process of electro-plating to render rapid printing practicable, and the marvelous rotary press which reels off about 100,000 sixteen-page papers per hour. These presses require from 100 to 200 horse-power engines and consume about seventy-five miles (roll width) of paper per hour, or 300 miles the width of the newspaper, which is delivered by the machine folded to half-page size, pasted and counted.

The mechanical ingenuity of the American (there being on file in the Patent Office at Washington over one million patents*) is responsible for one of the paradoxes of industrial life. By the adoption and introduction into their plants of cost-saving machinery the manufacturers are able to pay the highest wages to their employees and at the same time to undersell their foreign competitors. No manufacturers in the world are so ready to accept new labor-saving inventions as are those of the United States, and none so readily send costly machinery to the scrap-heap in case a better machine is discovered for the economic production of a manufactured article.

The inventor is gradually emancipating man

*This is almost three times as many patents as have been granted in any other country.

from the drudgery and grind of irksome labor. Labor-saving machinery is replacing man in many occupations and pursuits whose labor is of a mechanical and muscle and mind racking nature. But, some one will object, what is to become of the laborer thus supplanted? The answer is that still newer inventions open wider fields for labor, and it becomes the duty of the individual to adjust himself to the new conditions. Later it will be shown how mental supersedes manual labor.

Until the beginning of the nineteenth century, labor-saving machines were looked upon as the enemy of the workingman. England forbade emigrants carrying tools to other countries. What was the result? Necessity compelled and incited genius to spring into new life, with the result that American goods compete successfully with the world.

A new era has dawned, and from all these inventions have come larger incomes, shorter hours of labor and a greater degree of comfort and health, so that in this, the twentieth century, the inventor is ranked as a benefactor whom the world delights to honor.

VII.

THE ENTREPRENEUR.

Entrepreneur is the French word for "undertaker"—not the undertaker or funeral director of America, although the latter comes under the classification, for if he undertakes to bury a person (dead) he is usually successful in the undertaking. The word applies, in economics, to the employer of labor who undertakes to accomplish something in a business, industrial or commercial way—the "co-ordinator" of the orthodox economists, and the "enterpriser" of Hawley and other advanced economists. Some economists limit the term to managers of large enterprises.

It is true that the entrepreneur is a co-ordinator of the factors of production (land, labor and capital), but does he not do more than bring them together? Do the inventors and other classes of intellectual workers possess all inventiveness; have they a corner on imagination and inspiration? Does the creative faculty in man stop short with the man who invents a machine, composes an epic or produces a grand opera?

To invent means to find out or to produce by mental activity, to create, produce or construct by original thought or ingenuity, to originate (a new method of action, kind of instrument, etc.). The definition of inventive as given by the Standard

Dictionary is, "Able to invent; quick at contrivance; ready at expedients." If an entrepreneur, therefore, produces by mental activity, or if he devises a new method, better and shorter, of performing a certain kind of work, he is an inventor.

One of the principal functions of the entrepreneur is the adaptation of the various economic instruments to the accomplishment of a specified end. The salient distinguishing feature between the inventor and the entrepreneur is that the former expresses his creations in a concrete and patentable form, while the latter confines his creative energies principally to the operation of a plant or the conduct of a large enterprise.

As has previously been stated, one of the most perplexing questions with which the economists struggle is that of the exact function of the entrepreneur. Hawley, who is the promulgator of the "Risk theory of profit," says, in its defense: "And as no one, as a matter of business, subjects himself to a risk for what he believes the actuarial value of the risk amounts to—in the calculation of which he is on the average correct—a net income accrues to enterprise, as a whole, equal to the difference between the gains derived from undertakings and the actual loss incurred in them. This net income, being manifestly an undetermined residue, must be a profit, and, as there can not be two undetermined residues in the same undertaking, profit is identified with the reward for an assumption of responsibility, especially, though not exclusively, that involved in ownership."

Hawley advances this theory in opposition to the

orthodox theory that an entrepreneur is entitled to profit as remuneration for his services rendered as a director or co-ordinator of the factors of production. It will readily be seen that neither school of economists explains the economic nature of the function of the man of business. The one says he is entitled to a profit because he assumes a risk, while the other contends that the mere co-ordination of productive factors is the sole function of the man of enterprise, and for which he reaps a profit. The admission that both are right as far as they go throws but very little light on the subject under discussion. It must be conceded that one who assumes a risk is entitled to a wide margin for profit, as a safeguard against loss, and it is also plain that he is a co-ordinator. This, however, is giving a thing a name without defining it.

An effort will be made to determine the nature of the productive force, or forces, embodied in the entrepreneur. The fact seems to be that he has a complex power exerted in numberless ways. In analyzing his productive qualities, it must be borne in mind that there are many classes of entrepreneurs, the term covering all those who engage in enterprises of a productive nature (including, of course, the agriculturists), and naturally his activities embrace all of the fifteen methods of facilitating production.

Primarily, the function of the entrepreneur is to discover the wealth of a country in order to the development of its resources in the general effort to satisfy the desires of man. The magnitude of the function of the entrepreneur can be realized

when it is understood that he not only must supervise the manufacture and marketing of products, but must also exercise his mental powers in the selection of subordinates, and in training them to do their work expeditiously and efficiently. That is, he must study both men and things, and must utilize the ideas of the men under him in the conduct of his enterprise so as to secure the best economic results.

The resources of a nation, as has before been stated, consist not only of the so-called economic wealth, products of land, mines and manufactures, but also national wealth. The latter kind of wealth has not been classed as such by economists, but it will be proven that, as in the case of the apple that was allowed to rot, the inherent wealth of natural scenery and the like can be transmuted into potential wealth by the interjection of mental and physical labor.

But, it will be objected, natural scenery can be given no exchange value. Let us see if this can not be done. The entrepreneur constructs a railroad into a region of scenic beauty and grandeur, and its attractive power proves so great that dividends far in excess of the basic six per cent. can be paid on the stock. It is plain that the enhanced value of the road is due, first, to the natural attractions, and, second, to the enterprise of the promoter, who rendered the beauties accessible. As the exchange value of a thing is governed by its productiveness, and as the latter in this case was due in great part to scenery, the latter has become capitalized.

But to return to the undertakers. There have been instances recorded where the supposed corpse has "come to life," thereby causing great scandal and interfering with the well-ordered arrangements of the funeral, as no self-respecting corpse should do. But who shall say, even in cases of this kind, that the funeral was altogether a failure? It is the law of the commercial, as well as the moral and social, order, that out of the labor and travail, the ashes and the dead hopes of others, springs new life of beauty and power.

This simile may be somewhat bizarre and in bad taste, yet it strikingly illustrates the point it is desired to make. Do we not all recall instances innumerable wherein the labors and hopes of others have seemingly gone for naught, yet, in reality, from the failures and mistakes of these persons there have been reaped bounteous harvests? In other instances the mistakes of others have proven to be the warning bells of the buoys on the great sea of commerce. If the undertaker had not struck a rock in the road and wrecked the hearse, the corpse would still be a *corpus inanimatum*.

Now abideth creativeness, labor-saving, time-saving, cost-saving and profit-increasing devices and efficiency methods of fifteen varieties, but the greatest of these is creativeness.

There are still, no doubt, unbelieving ones who keep revolving in their minds the question, "What is this commercial creativeness?" "Creativeness" is greater than all the other fourteen efficiency methods, because it is the life-principle of all, and more. It is easy to see the merits of a thing after it is

accomplished; but to have the vision of a new project, and the courage to bring it to pass—that is the real thing. This is the “initiative” we read so much about, and which is so little understood. While the so-called “efficiency experts” are puttering around, eliminating a useless motion here and speeding up a machine there, the creative man is eternally grasping after new fields to conquer, new markets for his products at home and abroad, is continually evolving new methods of promotion (advertising, etc.), and better systems of production and distribution.

But what if he should fail—if his dreams and endeavors should become as ashes in his hands? It is better to have tried and lost than to have never tried at all. It was this creative spirit—of vision and courage—which inspired Columbus to “sail on and on and on,” as Joaquin Miller has so graphically portrayed in his deathless poem, and that led to the discovery of a continent. What if he had turned back when his sailors mutinied, and when the very stars seemed to have departed from the sky? And Columbus seems to have imparted to all Americans his glorious qualities.

It was this spirit that impelled the early pioneers to explore and conquer a hostile continent; this was the spirit that fired the makers of the Declaration of Independence and freed a continent from tyrannous rule; it was this spirit that led the founders of the republic to establish the freest form of democracy on earth, and to defend it against stupendous odds; it was this spirit that spurred the “pathfinders” to trail a way across deserts and

mountains to the golden Pacific; and it was and is this spirit that led and is leading the captains of industry to dot the country with factories, to encircle it with wires and embrace it with ribs of steel.

All of this was done at the cost of many lives and the loss of millions in money and property. "What waste of men and resources!" the pessimist and chronic croaker cry. But in what other way could a continent be subdued? That man is not worth considering who sees something which ought to be done, but counts the cost before undertaking it.

Much is being written in these troublous times about the great "waste" resulting from inefficiency. There lies before us a lugubrious volume entitled "The Price of Inefficiency," and the waste which the author charges against the Government and people presents a dazzling study in millions. The author says we waste \$50,000,000 and sacrifice fifty lives each year in forest fires; we waste a billion cubic feet of gas daily; we waste \$22,000,000 a year in manufacture of coke in lost gases; we waste \$238,000,000 in losses in floods and freshets; we waste \$500,000,000 a year in soil erosion; we waste \$659,000,000 a year through losses to growing crops, by noxious insects and careless methods of agriculture; we waste \$772,000,000 annually in losses to incomes due to industrial diseases; we waste \$1,500,000,000 through the loss of life and illness to industrial workers through preventable diseases, accidents, and—but we will not inflict more on the reader.

The papers have recently reported an unprece-

dented snowstorm and blizzard throughout the Middle States, causing the destruction of many lives and millions in property, and effectually blockading traffic and communication. How is all this waste to be avoided? Does it not seem that waste is a necessary concomitant of all growth and progress? It would appear so, and that the industrial atmosphere, as in nature, must be revived and reoxygenized occasionally.

A. W. Shaw, editor of *System*, the business man's Bible, writes: "Every day a part of you dies. But as your wornout tissues fall away new ones replace them. Therefore, you continue to live. When change ceases, life stops. And business, like your body, is made up of parts which must continually change and be renewed. What makes little business swiftly colossal—covers their grounds almost overnight with great buildings—feeds their many furnaces with huge quantities of raw materials—swells their profit as if by magic? There is only one answer. Other firms may duplicate Marshall Field's stock and goods, enlist ten times the Edison company's capital, start a dozen stores where H. B. Claflin has one, yet fail to make any inroads on their trade. Their strength lies not in buildings, goods, capital; but in tremendous aggregations of right methods.

"In this they are typical of a thousand other great houses. Every day in each of them some method dies—is outworn, scrapped and replaced; obstacles arise, but fresh plans are continually brought forward to blow them out of existence. Old ideas, processes, invented devices, constantly

give way to new things that better accomplish their functions. Buildings are torn down, machinery torn out; designs, materials, products are altered. Everything in these unbeatable businesses changes except one thing—the principle of discarding dying tissue the moment it begins to die, the practice of replacing accepted methods the instant better ones are discovered.”

So it seems to be a law of universal application that waste precedes and accompanies growth. Who knows but that these great national calamities form a part of a general scheme for the betterment of the human race? The supreme lesson to be gathered is, that all of us are expected to do our best—to try, and to keep on trying until our purpose is accomplished or forever defeated.

“Visionaries,” “lunatics,” and other choice and complimentary epithets, were applied to Cyrus W. Field and his *confreres* in their “wild” attempt to lay a cable across the sea. Similar terms, accompanied by ridicule, met Robert Fulton and those who followed him in developing transoceanic steam travel, and to the first builders of railroads and telegraphs.

Henry Ward Beecher, in an address at a banquet to Cyrus W. Field, following the successful laying of the Atlantic cable, said: “I scarce dare any longer think what shall be. I remember the derision with which Whitney’s plan for a railroad to the Mississippi was held. I remember there was scarce a paper in the country that did not feel called upon to talk of the advisability of sending him to the lunatic asylum. I remember when the project of a

steamer crossing the Atlantic was declared scientifically impracticable."

It would appear that these "visionaries" are not so *visionary* after all. They must be more than dreamers—they must see something that others of duller imagination can not see. What distinguishes between the creative visionary and the visionary as generally conceived—between the visionary builder and the visionary dreamer? It is the practical element. He must combine his imaginative qualities with the matter of fact. Columbus had more than a vision; he was convinced from his readings and researches that the earth was round, and that by sailing westwardly he could reach India. He did not expect to discover a continent. He probably would have been satisfied with an island or two. But it appears to be a law universal that the man with the firm convictions and courage is rewarded beyond his wildest hopes.

The entrepreneur must not only have a vision; he must have knowledge and wide information, and he must be able to convince hard-headed capitalists of the practicability of his vision. For, that which in an invention makes it worth thousands, in business may cause it to be worth millions, in terms of which the captains of industry must think. What is the thing—the active and acting germ—in an invention that renders it patentable, and in a business that renders it marketable? Evidently the idea or vision. But in promoting an enterprise there must be visions upon visions and acts upon acts.

At the outset the entrepreneur must combine the imaginative and the mathematical mentality—a

rare combination. The railroad builder, for example, must not only possess the prophetic power to discover the prospective value or economic attractiveness of the wealth, or resources—agrarian, mineral or scenic, and, later, dynamic—along a projected line, but he must have the mathematical or business ability to compute its cost and finance its construction, and, later on, its extension. This includes methods and means of securing the necessary funds for the conduct of the enterprise with the least cost, and the issuance of bonds for extensions and improvements.

Having secured the necessary funds, the promoter begins to organize forces in the construction of the road into the heart of the region to be exploited, and, mayhap, by tremendous engineering feats, to the very summit of the highest range of mountains.

In the construction of the railway the entrepreneur must utilize the knowledge or brain power of numerous engineers and mechanics, as well as the manual labor needful for carrying out his plans. No small part of the work lies in selecting competent men to see that the plans are economically prosecuted. Stated generally, the entrepreneur himself contributes toward the construction of the road by many valuable suggestions, both in planning the route and building the railroad. In the one, he shows how the route can be shortened, perhaps, by tunneling through a mountain or by spanning a lake, even though it entails a greater initial cost, realizing that it will ultimately prove an economic benefit in the way of decreased cost in transportation and maintenance and in increased travel.

Having completed the road, the entrepreneur must bring into play powers of organization and administration in the tremendous task of operation. The same care must be exercised here as in the construction of the road, both in the selection of the employees and in the adoption of modern methods and appliances for facilitating operation. He must have great administrative ability and his various mental capacities are taxed to the limit.

We now come to the most important operative factor in the production of wealth—the magic wand which conjures forth the hidden gold. We refer, of course, to advertising, which includes the judicious use of printers' ink as well as personal representation. It is plain the active principle of this factor is gray matter. After the railroad has been built, the schedule made up and the various departments organized, the great and vital proposition of securing the business remains. This is accomplished in three general ways—by sending out personal representatives, by correspondence and by advertising. The representatives or agents are really a part of the entrepreneur machine. The men are selected by the promoter and instructed in their work. The other two methods may be dealt with collectively, as the only manner in which they differ is in the selection of means. In correspondence, the business is advertised through letters or telegraphic or telephonic communications, which general mediums of circulation are utilized in what is commonly known as advertising.

The advertiser must exercise three important functions in securing the desired ends; namely,

those of choosing the most salient points for advertisement, the preparation of the advertising matter, and the selection of the mediums which will reach the sort, and largest number, of people who may be attracted by what he has to offer. All of these functions require great foresight, severe mental training and concentration and persistent endeavor. In short, the success of the enterprise depends largely upon the proper and conspicuous placing of its advantages before the public. There is practically no limit to the economic value that may be attracted in this manner.

To all other qualities the entrepreneur must add executive force, and in the conduct of a business must decide quickly and rightly upon thousands of situations that occur almost daily. In a word, the economic value of the idea is interwoven throughout his commercial dealings, and it would be futile to try to enumerate a fractional part of the examples of creative wealth which obtain in the prosecution of a great business enterprise.

Brains are the real miracle-worker. By the application of gray matter the three factors of production under the old school are modified, reduced, increased and in some instances practically done away with. The introduction of ideas results in the elimination of labor to a degree, and, by permitting the adoption of more efficient methods, reduces the amount of capital required in various industries in numberless ways, and, in the case of land, makes two blades of grass grow where one grew before.

One of the most potent recent developments in industrial life is the introduction of specialists into

all phases of business. Experts are employed at high salaries in order that economies may be effected in the daily routine of business. The specialists include not only the highly skilled in the various trades and occupations, but also those who have made a study of the new phases of commercialism as it becomes more highly organized with the lapse of time. For instance, there are those who have become proficient in arranging office equipment for large corporations and firms in order that the daily work may be carried on with the minimum of exertion and cost.

If the reader is not yet convinced of the economic value of the idea, let us try it on the farmer. We have, in previous chapters, made casual reference to farming, but as he also comes under the head of entrepreneurs we will elaborate.

"Surely, dead soil," says the conservative, "can not be made to produce beyond its natural strength." Let us see: Given two farms side by side, with the same quality of soil, receiving like amounts of rain and sunshine. "The products will be equal," says the conservative, but the twentieth-century farmer knows how fallacious is this reasoning.

One of the farmers plants his crops seasonably and tills the soil assiduously, but uses no artificial means to enhance its productivity. The other uses all modern methods needful and applicable, such as the selection of plants and animals adapted to the soil, rotation of crops, intelligent fertilization, deep plowing, dry farming, irrigation, the introduction of bacteria which are known to be necessary for the growth of some plants, the use of insecticides, such

as paris green or the famous Bordeaux mixture, which saved the grape industry of France, and scores of other expedients which can not be enumerated.

The revenue derived from the latter farm is several times greater than from the first named. What caused the increase but the application of brains, as it were, to the soil? Now, the Socialists, Syndicalists, Industrial Workers of the World, and their ilk, say that labor produces all the wealth, therefore the farmer who was efficient must divide with the neighbor who was too slothful to think and to act.

Even such an unintellectual pursuit as bricklaying has been revolutionized recently by efficiency methods. The quantity of work done by a single laborer has been trebled by the introduction of machinery which carries the brick to a position level with, and within easy reach of, the workman, who lays the brick without being compelled to use the time and energy consuming stooping motions incident to the customary methods of the trade.

Rufus Gilmore, writing in *System*, says: "Goodwill is the mystery of modern business. Individual business men and corporations include it in their practical calculations, yet its exact nature can not be determined. Despite all sound reasoning of advertising experts and accountants, despite all the beating of tomtoms by underwriters and promoters, goodwill is still the fourth dimension of business. It is there, but the difficulty lies in making others see it, and in making them see it as large as you see it."

In a diagram Gilmore sets forth that goodwill is made up of the following component parts: competition, patent rights, reputation for integrity, personnel, trade names, condition of market, pending orders, franchises, established location, publicity, credit and annual earnings."

Granting the reliability of the analysis, it requires but a brief examination to see that the elements of goodwill may be classed, almost in their entirety, as creative wealth. The mystery is solved. Brains, the life-force of creative wealth, is the key to the answer, and in the answer lies the uncertainty of the value of the elusive goodwill. Following the parallelism of the fourth dimension, while there is an element of mysticism in the fourth dimension of business, it is not as subtle or evasive as the fourth dimension of space. The former is conceivable; the existence of the latter can only be deduced by algebraic methods or processes of analogy.

Taking up the various elements productive of goodwill and analyzing their qualities, we find, first, "competition," which means, if anything, the matching of wits with rivals, and hence is clearly creative in nature. "Patent rights" can be placed in the same category without argument, as can also "reputation for integrity" and "personnel." "Trade names" are valuable only in so far as the merits of the commodity and publicity extend. Both factors are plainly creative. "Condition of market" depends principally upon advertising methods, and this naturally falls under the head of creative wealth. As it requires intellectual force to secure "franchises" and hold them, this element is partially creative.

But as franchises are required only in a limited number of enterprises, this element is not constant. "Established location" means but very little unless there is push and energy behind the business. This element is almost wholly creative because it required foresight to select the location. "Publicity" and "credit" are purely creative in nature, while the last named, "annual earnings," is dependent upon all the previously named elements, and therefore mainly creative.

It is evident that, in cases of businesses changing hands, unless the personnel goes with it, the value of goodwill is problematical.

And, finally, above all, the entrepreneur must possess character or "reputation for integrity."

Perhaps the late J. Pierpont Morgan was the most brilliant exponent of efficiency that this country has ever produced. He possessed nearly all the qualities needed by an entrepreneur in a superlative degree, and was one of the greatest constructive captains of industry. But he was greatly maligned and misunderstood. For example, a recent editorial in the Philadelphia *North American* says:

"He [Morgan] believed that prosperity is created by dead weight and brute force of masses of money, whereas it is created by the efficiency of the average dollar, and he measured prosperity by bank balances and sales of securities, instead of the welfare of the average man."

It would be hard to find in contemporary literature an equal number of crass errors crowded into a single sentence. Morgan, in his testimony before the Pujo Money Trust Investigating Committee,

made it clear that he placed more emphasis on character than any form of collateral, "mass of money" or "brute force." It would be difficult to understand what the writer means by the "average dollar." One dollar is just as "average" and just as "efficient" as any other dollar. Perhaps he means the dollar of the average person. If so, this does not state an economic fact. The dollar of the average person does not create wealth in the larger sense. It is the money invested in big enterprises that provides work for the millions and creates wealth.

In the chapter on "Capital" it was endeavored to prove that character and capacity constitute the only real and lasting capital. Business men may gain a mushroom and ephemeral success by resorting to sharp practices, but it may be affirmed with assurance that the men behind great enterprises of stability and active growth must align themselves with the laws of nature and man. This is true for two reasons: First, subjectively, if a man violates the laws of nature, he begins to disintegrate, physically, intellectually and morally (efficiency method number 9—deleterious influences); and, second, objectively he must conform to the laws of the land or, sooner or later, his business will be sundered in a collision with a materialized statute or consumed by the fire of an incensed public opinion (efficiency method number 15—economic environment).

But to attain the very highest success, the entrepreneur must not only adjust his business to the principle of the fair deal, but must supplement the policy of cold honesty by the spirit of the helping

hand—the sacrificial spirit of “give”—in order that he and others may live. If the records of some of the most successful business men are examined, we will find that this spirit has animated them throughout their careers.

In the first of a series of articles running in the *World's Work* on “Successful Business Men,” the altruistic policies of the H. B. Claflin Company, of New York, are set forth in graphic manner. It tells how this great firm, with its many ramifications and branches, built up and retains its prestige; how it sends representatives to each of the States to study industrial conditions; how it helps struggling retailers to get on their feet—both in an advisory and financial capacity—and how it treats all with whom it has commercial intercourse with uniform consideration, courtesy and honesty. This was the policy of Commodore Vanderbilt, who in his day was the master of transportation on land and sea. He outdistanced his rivals because of his persistent adherence to the principle, “Better and still better service.”

But there are two other aspects to this “giving” spirit. The first (as above) may be designated as the “voluntary-altruistic-mutually-participating” principle. Then there are the “involuntary-altruistic-mutually-participating” and the “involuntary-altruistic-objectively-participating” principles.

The second principle, the involuntary-altruistic-mutually-participating, is that which runs through all successful business enterprises, as was exemplified under “dynamic” wealth. It was shown how this dynamic energy, directly and indirectly, provides

employment for the many, and how it benefited all who had commercial dealings with the direct beneficiaries.

The third principle, objectively-participating, applies to the unsuccessful business enterprise—to the pioneers who blaze a trail for others to follow. And it is asserted that statistics prove that ninety per cent. of all business men fail in their first undertakings. But how does this benefit others? it may be asked. In a number of ways. First, by giving employment to laborers, for a greater or less length of time. Second, by developing a new field of labor and industry. A railroad, for example, may be built into virgin territory, and, although it may suffer heavy loss for a number of years, it proves the means of putting a new field of action on the industrial map. Or, a corporation dealing in real estate may erect magnificent buildings on a tract of land which they are promoting, only to meet with great financial loss. Yet the presence of these buildings and improvements renders the adjoining property more valuable than before. This thought will be further expanded under "Single Tax," wherein it will be shown that the "unearned increment" is largely a product of "creative wealth."

The third principle also indirectly helps others by affording a sort of horrible example. Other men of enterprise, or the original promoter, may be able to profit by the mistakes he has made, and on the ruins of the industrial structure erect one of solid endurance.

Within the past few years much has been written on "Industrial Efficiency" by such exponents of

the art as Taylor, Emerson and Gantt, and a great deal has been accomplished in the practical application of their methods to economic life. Their theories and methods, however, are mainly defensive—a search for, and elimination of, “leaks”; a strenuous warfare against internal foes of a business enterprise. In this work the offensive methods of industrial warfare are magnified, without intention of minimizing the importance of the defensive plan of action.

Harrington Emerson, in his treatise on “The Twelve Principles of Efficiency,” brilliantly expounds the doctrine of defensive industrial methods. ‘Some of his principles are partially offensive or constructive, although he does not elaborate on this phase of the subject. His twelve principles are, Ideals, Common Sense and Judgment, Competent Counsel, Discipline, the Fair Deal, Accurate and Reliable Records, Planning and Despatching, Standards and Schedules, Standardized Conditions, Standardized Operations, Written Standards of Instruction, Rewards for Efficiency.

It will be seen that emphasis is laid upon the standardization of work, which consists in separating from the line organization of a business a staff officer whose duty it is to set up tentative standards of performance; to correct these standards by working out scientifically the best methods of performance; to determine the best inducements to the employee to attain these standards, and to instruct the employees in these perfected methods. These methods apply principally to the elimination of “waste,” or the eradication of “leaks,” such as

unnecessary motions in the laborers and various kinds of wastes in the materials of production occurring in the general operation of a business enterprise.

The "Ideals" of Emerson correspond, in a way, with the "creativeness" or powers of vision or foresight in the entrepreneur, the first of the fifteen "expression-forms." His ideals, however, are made to apply almost wholly to the operation of a business with a total disregard of the "initiative," or initial idea. His nearest approach to the latter principle is in his reference to James J. Hill and other captains of industry. He says of the former:

"There is one great American railroad genius, always an idealist, who has arisen to the commanding position in the railroad world because he had definite ideals. He states that a railroad company is to be managed to earn dividends; that expenses are by the train-mile, and receipts by the ton-mile. He has developed the country through which his road ran, and lowered rates, because this gave him more ton-miles. He has reduced grades and curvatures, and used heavy locomotives on long trains, because this reduced the cost of train per mile. He has reached out for Oriental traffic, thus lessening the ton-mile cost.

"Another great railroad executive, J. W. Kendrick, regards disagreements with laborers as consuming time and energy, destructive to peace, loyalty and harmony, and he therefore resolved to set up a high standard of discipline, based on the fair deal, and made attractive by efficiency reward."

It may be practicable to standardize the opera-

tions of machines and laborers of an industrial or commercial enterprise, but it is very difficult to standardize the mental operations of a "creative" man. It would not be advisable to do so, even though it were possible. And herein lies the difference between the offensive and defensive efficiency methods. It will be observed that Emerson makes no reference to advertising and promotion in his twelve methods. This is but natural, since these methods are decidedly offensive or constructive. You can't standardize this kind of creative work.

How would you go about to standardize the mind of an Edison, a Morgan, a Westinghouse, a Vail, a Carnegie, a Harriman or a Marshall Field? You could as easily put hobbles on a meteor or resolve into its constituent elements the aurora borealis. It is apparent that he who attempts to classify or circumscribe the actions of the normal brain of the *undertaker* and accomplisher of the business world of to-day is foredoomed to complete failure.

About all that can be done is to take up the fifteen expression-forms and illustrate by examples from modern industrial life how the entrepreneur utilizes these forms of efficiency methods in the conduct of his business. If any one is not satisfied with our selections and classifications, he can choose his own examples (there are millions of them) and construct his own classifications, which will no doubt prove a more entertaining and instructive pastime.

Before going into this analysis, however, it would be interesting to note that many of the trades

and businesses are in themselves "expression-forms." For example, the cobbler, blacksmith, tailor, plumber and all "fixers" come under efficiency method number 11 (eradicate deleterious influences in material). The banker may be classed under expression-forms numbers 2, 5 and 7. The principal function of the banker is to take care of our money—a very cheerful and altruistic habit—and to facilitate exchange. Money is a time and labor saving convenience, and in the form of capital is classified as material. Now, the banker very kindly permits you to draw checks on the money deposited with him, thus saving you the trouble of handling the cash. In the conduct of a business this rapid method of effecting commercial transactions is very essential and effective. The banker "augments" material by effecting loans and by paying interest on deposits. He also may be said to remove deleterious influences from material, by putting your money in "strong boxes."

But, paradoxical as it may seem, the watchmaker is not a time-saver at all. On the other hand, he is an eradicator of deleterious influences in material. There are a great many processes in industrial affairs that require a fixed time for their consummation, such as the cooking of an egg or the tempering of steel, and it is necessary that the workmen be equipped with timepieces with which to gauge these processes. The deleterious influence is the possible destruction of the work which would ensue in the absence of timepieces. Negatively, therefore, the watchmaker must be classed under expression-form number 11.

The trades and occupations cited, with the

exception of the banker, are exclusively material fixing or augmenting, and correspond to the professional "men-fixing" occupations of the physician, minister, lawyer, etc., which were "placed" in a previous chapter. Then, in addition to these classes, there are tradesmen who partake of the qualities or functions of both the material and labor fixers. They help cure diseases of land, labor and material. Foremost among this class is the druggist, who supplements the physician and chemist in their laudable efforts to eradicate the deleterious influences preying on man, and on the soil and material objects.

With the druggists must be classed the book-sellers and stationers who traffic in all sorts of reading-matter—books, magazines, papers and what not. Some of these publications aid in the cultivation of the mind, while others teach methods of manipulating material. But some of these products of the art preservative *unfavorably* affect the mind and general economic conditions, and this thought naturally leads to the consideration of other occupations and pursuits which have a similar effect on man.

At the head of this class stands the saloon-keeper. It is not necessary to dilate upon the evils growing out of the excessive indulgence in drink. That this habit lessens the economic value of the laborer will not be contested. Of minor consideration are the confectioners, ice-cream and mineral-water manufacturers. Excessive use of these refreshing compounds have a deleterious influence, but this may be said of any sort of overindulgence. There is one thing that can be said in favor of

these injurious indulgences—they make business good for the physician, druggist and, mayhap, the undertaker. And here is where the latter evens up (another example of triumph from travail).

And with this "salvage crew"—the doctors and the druggists—should be classed the accident and life insurance companies, for they provide the physical means wherewith to repair broken bones, bodies and fortunes. Other classes of insurance—fire, tornado and earthquake—correspond to, and co-operate with, the material-fixers, the blacksmiths, carpenters, and so forth.

But what about the jewelers, haberdashers, milliners and all those classes who cater to the artistic and the æsthetic? Do they contribute to economic efficiency? The answer must be—directly, they do not. But is it not possible that the gratification of the æsthetic sense may have a subtle effect upon one's general outlook, and thereby affect his general conduct? Does not this tend to render him more cheerful, and in a way, as with music, have a tendency to remove deleterious influences in the laborer? While there have been no experiments along this line, it is reasonable to suppose that, in some instances, at least, such an economic benefit does accrue. But, as previously stated, the prime function of all these extra-economic or dynamic pursuits is to open new fields of labor for the great industrial army.

In illustrating the importance of "creativeness," which includes the vision and the initiative, *System* says: "Imagination is the motive power of business. Without the capacity to look into the

future, to anticipate development and to see visions, the individual worker is merely a mechanical unit of the great engine of trade."

The editor of *Life*, in referring to the failure of Charles S. Mellen as president of the New York, New Haven & Hartford Railroad Company, said: "If he (Mellen) had not worked so hard, he might have been worth more, because the most valuable men are paid chiefly for sitting around and thinking. The great efficiency is like what we read of the Almighty, who never lifts his hand, but drives the universe by what He is. One clear thought in a directing mind may be worth a year of faithful details. It always seemed as if Mr. Mellen drove himself too hard to think his best."

In his biography of the late Mark Hanna, Herbert Croly writes: "Mark Hanna's salient characteristic in business was the initiative. He was essentially, if not exclusively, an entrepreneur. He broke new ground. He started and developed enterprises. In order to take advantage of these opportunities, a man needed an aggressive will, an abundant energy, and an alert, shrewd and comprehensive mind." An associate of Hanna says: "He was tremendously interested in anything new. If his judgment approved it, he was enthusiastic in pushing it and testing its value. But he quickly sensed a failure and turned to something else with equal energy and courage."

In an article in the *American Magazine* on "Irving T. Bush, Builder of a Great Industrial Community," the following was said of him:

"Some fifteen or eighteen years ago, Irving T.

Bush had several million dollars, a big vision and less than thirty years of experience on earth. The fortune was inherited from his father, the vision arose from the peculiar geographical conditions of New York City. . . . The ideal industrial community, thought young Bush, was where land was comparatively cheap, where working people could live at low cost combined with comfort, and especially where factory, freight-car and steamship could all meet and kiss one another. So young Bush dreamed his great dream about some water-front sand lots he owned away down the harbor in South Brooklyn. On these sand lots he saw rising big warehouses and great industrial buildings containing every modern wrinkle," etc., etc. People who heard of the vision laughed, but Bush made it come true. How he accomplished the feat is well worth reading.

Gerald Stanley Lee, author of "Inspired Millionaires" and "Crowds," says: "If the author had known when he wrote his book (the first named) some of the men he has known since, he would have expected more, and not less, of the business of our modern world; men who have made new and great professions out of the businesses in which they have been engaged; men who have thought nationally in their daily work; men who, in stores and foundries, offices and factories, day by day, have lived and wrought like statesmen."

The difference between the entrepreneur and the inventor in the initial step is slight. The inventor conceives the idea of a contrivance, the manufacture of which will amuse or benefit mankind. Material

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—that is, natural products—must be used in its construction. The entrepreneur perceives that a particular bit of scenery, a section of country, or other forms of wealth, can be advantageously exploited. In other words, it is the vision or insight of both the inventor and the entrepreneur which leads to the final consummation of their plans. One starts with the idea and ends with material, while the other reverses the process.

John D. Rockefeller, in his autobiography published in the *World's Work*, details the steps leading to, and the organization of, the great Standard Oil Company. He says, in part:

“During the years when I was just coming to man’s estate, the produce business of Clark & Rockefeller went on prosperously, and in the early sixties we organized a firm to refine and deal in oil. It was composed of Messrs. James and Richard Clark, Mr. Samuel Andrews and the firm of Clark & Rockefeller, who were in the company. It was my first direct connection with the oil trade. In 1865 the partnership was dissolved; it was decided that the goodwill be sold to the highest bidder. I had made up my mind that I wanted to go into the oil trade on a larger scale, and, with Mr. Andrews, wished to buy the business. I thought I saw great possibilities in refining oil. The bidding began at \$500. I bid \$1,000; they bid \$2,000, and the bidding continued until the price reached \$50,000, which was more than we supposed the concern to be worth. Finally it advanced to \$60,000, and by slow stages to \$70,000, and I almost feared for my ability to buy the business and have

the money to pay for it. At last the other side bid \$72,000; without hesitation I bid \$72,500. Mr. Clark then said, 'I'll go no higher, John; the business is yours.'

"The firm of Rockefeller & Andrews was then established, and this was really my start in the oil trade. Everybody went into the business, and the price went down until the trade was threatened with ruin. It seemed absolutely necessary to extend the market for oil by exporting to foreign countries, and also to greatly improve the processes of refining, so that oil could be made and sold cheaply, yet with a profit, and to use as by-products all the materials which, in the less efficient plants, were lost and thrown away. To accomplish this it was necessary to increase our capital by availing ourselves of the best talent and experience. It was with this idea that we proceeded to buy the largest and best refining concerns and centralized the administration of them with the view of securing greater economy and efficiency. This enterprise, conducted by men of application and industry, working hard together, soon built up unusual facilities in manufacture, in finance and in extending markets."

Thus we have in his own words Rockefeller's story of the origin of the Standard Oil Company, and, if we read between the lines, an idea of the salient qualities of his mind can be obtained. He says that the firm of Clark & Rockefeller was prosperous, proving that he had character and capacity. Then he had a vision of big things in the oil business, and when he started to bid on the goodwill of the dissolved firm, he was backed up more by

creative capital, the confidence born of achievement, than by the capital embodied in dollars and cents. It was apparent that he was determined to buy that oil business, regardless of price, for he did not stop bidding, even when he "almost feared" for his ability to purchase it.

A short while after coming into possession of the plant, ruin stared him in the face. Did he lie down? No; he took another hitch in his galluses and pushed the business with renewed activity. To accomplish this, he resorted to a number of efficiency methods. When competition became strong and the price of oil was "shot to pieces," three protective methods were brought into play. They built up a foreign trade (efficiency method number 13—advertising and promotion); improved the processes of refining by utilizing byproducts, etc. (efficiency method number 7—material-augmenting), and centralized administration by buying up other firms and securing new talent. In this concentration is embodied efficiency method number 3 (material-saving—reduced capital stock), efficiency method number 2 (labor-saving—permitted reduction of working force), efficiency method number 12 (eliminated obstructive elements—competition, etc.), and, lastly, efficiency method number 14 (manufacture of a better product).

By building up a foreign trade the company relieved the congested home market, incidentally benefiting all oil refiners. Then, on the other hand, the great consuming class was benefited by the production of cheaper oil, made possible by perfecting the refining processes and centralizing administra-

tion. And it must not be forgotten that this foreign trade could not have been built up if it were not for this concentration of effort and capital. This centralization benefited likewise all the competing companies which saw fit to become merged with the parent plant. If some, through a mistaken policy, lost out in their fight for independent manufacture, they were at least partially to blame for their unlucky plight.

Of course, if we could go through the history of the company, we would doubtless discover all of the efficiency methods in almost constant use.

But how shall we qualify the daring genius of that "Colossus of Roads," the late Edward H. Harriman, who struck a new note in the song of railroading and astounded a continent? The *Outlook* said of him:

"Among all the stories in American railroading, and it has teemed with the marvelous, few chapters are so extraordinary as the building of the Union Pacific system by Edward H. Harriman. The boldness of the conception, the magnitude of the undertaking and the constructive genius shown in the working out of plans, are all unusual features even in a day of undertakings that make for us every day new records in industrial history. . . . He had faith in the mysterious, hopeless-looking, wonder-working Western empire that is wrapped in its unending dream of sunshine beyond the Missouri River. He had the keenness of vision to map out within it a traffic confederation of unequalled strength, the determination to supply it with railways—the best of their class in the world—and the

tremendous personality to persuade careful men to risk unheard-of sums of money to make good his plans."

The story of how he purchased the Union Pacific; how the line was leveled down to a maximum grade of forty-one feet per mile; how he spanned the Salt Lake and the Bay of San Francisco with great bridges; how he improved the roadbed and established the block system of signals, and then, after he had done all this, how he reached out after other systems—the Southern Pacific, the Oregon Short Line, Illinois Central, Chicago & Alton and others—has often been told, and forms one of the great romances of industrialism. But to continue:

"Mr. Harriman is auto-dynamic. His mind leaps over intermediate difficulties, because he knows they must give way to forceful endeavor and he has no time to waste on explanations or argument. It is not a matter of surprise that, under a brusque manner, we will find in Mr. Harriman an inviolable regard for his word. Mr. Harriman's word is good. If one gets his promise, it is a promise that may safely be slept on."

Here we have in Mr. Harriman the vision of a prophet, the initiative of a Cæsar and the unshakable, unimpeachable genius of right and might.

A writer says: "Up at Arden he (Harriman) rides horseback, drives fast horses, motors about and golfs a little, and in the winter-time gets out with his boys on the ice. They play hockey and other games, and the battle is always hot. The play must be fair and according to the rules; if

there is any violation of the rules, he goes over to the other side."

Vision, initiative, resourcefulness and character were the dominant characteristics of the man, and, being such, any attempt to analyze his methods of efficiency must prove hopeless. One may well believe that he embodied all of the fifteen efficiency methods. As an example of his resourcefulness, one striking example may be cited: After installing the block system on the Union Pacific, he found that accidents still occurred with undue frequency. To remedy this, he abandoned the time-honored custom of having railroad officials report on the causes and cure of accidents, and turned the investigations over to outsiders. After the railroad men recovered from the shock, it was found to prove increasingly effective. The fear of publicity had a tendency to hold in abeyance the more reckless of the engine-drivers and dispatchers.


The "do-and-dare" spirit of the pioneer characterized the indomitable railroad rescuer and reviver. When the engineer in charge of the bridge-construction work at Salt Lake notified him that the job was impossible, that all of the piling was being swallowed up by the quicksands, Harriman telegraphed back, "Go ahead and do it, whether it is possible or not."

Let us see how many of the efficiency methods are found in Harriman's cutting down grades, eliminating curves, ballasting the roadbeds, purchasing adequate rolling stock and minimizing accidents on the Union Pacific Railroad. Efficiency method number 1 is represented in his vision of a

reconstructed road and a revived country through which it passed. Number 2 (labor-saving) is found in the elimination of curves and grades. In this are also found number 3 (material-saving), requiring less material to construct the road; number 4 (land-saving) was the means of reclaiming waste land, and number 5 (time-saving) reduced the schedule nearly one-half. The ballasting and general improvement of the road also affected these efficiency methods.

The purchase of engines of a larger and more effective type served to augment material (number 7), permitted the carrying of heavier loads. The introduction of the block system and other accident preventatives involve efficiency method number 9 (eradication of deleterious influences in the laborer); number 11 (eradication of deleterious influences in material destruction of rolling stock) and number 12 (removed the obstructive notion of fear in travelers). And, finally, the general results—a wonderful modernized road—are represented in efficiency methods numbers 14 and 15. The latter applies to the melioration of economic environments and the former to the manufacture of a better article. While the railroader is not a manufacturer, in the strict sense of the term, yet he sells traveling and shipping service, and the improving of this resulted in a large increase in traffic.

We will now take up Harriman's compeer, James J. Hill, and in the analysis it will be shown that, while the latter may not be as brilliant and daring in some ways as the late railway king, yet he is more painstaking, more comprehensive in



efficiency methods, and has, therefore, probably rendered a greater service.

Elbert Hubbard, in his "Little Journeys to Great Business Men," says: "But the work of James J. Hill is dedicated to time, and Clio will eventually write his name high on her roster, as a great modern prophet, a creator, a builder. Pericles built a city, but this man has made an empire. Smiling farms, schools, factories and happy homes sprang into being in the sunlight of prosperity which he made possible, and as yet the wealth of the 'Hill country' is practically untapped."

After describing Hill's mother as a woman of decided personality, strong in feature, frank, fearless, honest, sane and poised, Hubbard adds: "James J. Hill is the son of his mother. His form, features, mental characteristics and ambition are the endowment of mother to son. He is a score of men in one, as every great man is. But when this kindly, philosophic, paternal, altruistic 'Yim Hill' is in the saddle you will see the significance of this story. A rear-end flagman at Galesburg was boasting to some of his mates how he had gone over the division with the new 'boss of the ranch.'

"Here a listener put in a question, thus: 'What kind of a lookin' fellow is the ol' man?' and he of the lantern and torpedoes scratched his head and explained: 'Well, you see, it's like this: He looks like Jesus Christ, only he is heavier set.'

"When James J. Hill became manager of the St. Paul, Minneapolis & Manitoba Railroad, in the latter part of the seventies, he sent over to England and bought hundreds of young Hereford bulls, and

distributed them along the line of the road among the farmers. Clydesdale horses were sent out on low prices and long-time payments. Farm seeds, implements and lumber were put within the reach of any man who really wished to get on. And lo! the land prospered. The waste places were made green and the desert blossomed as the rose."

Mr. Hill had previously advertised land at attractive prices and terms and secured thousands of settlers, and, in furtherance of the cause of farming, he began to send young men to agricultural colleges. He believes in making men self-supporting and self-reliant. Hubbard continues:

"In 1888 the St. Paul, Minneapolis & Manitoba became a part of the Great Northern. Hill had reached out beyond the wheat country into the arid zone, which was found to be not nearly so arid as we thought. The Black Angus and the white-faced Herefords followed, and where once were only scattering droves of skinny pintos, now were to be seen shaggy-legged Shire horses and dappled Percherons."

When Hill saw that cheap lumber was needed by the settlers, he reduced the rates on lumber from the Washington mills to less than one-half of the actual cost of transportation. The loss was not as heavy on his road as on others because of the policy, universally adhered to, of establishing easy grades and reducing curvatures. A steadily falling cost of hauling freight, with greater expedition of same, has marked Mr. Hill's progress in the railroad world.

In 1909 one well-informed writer stated that

Hill had more transportation interests than any other one on the continent. In his Great Northern system are 7,000 miles of track, in the Northern Pacific he has about 5,000 miles, and in the Burlington system 8,000 miles, and he says that we need 115,000 miles more of railroad tracks to properly develop the West.

When Mr. Hill proposed to build a railroad through a wilderness to the Pacific, Wall Street laughed at his request for money. It did not run from one big city to another big city. Mr. Hill went to London, Montreal and other foreign cities and secured the sum required to build the Great Northern. By close attention to details and by working, as some one says, twenty-four hours a day, he made the road pay dividends from the start, and all of the original stockholders have recovered the amounts invested in dividends and bonuses with interest.

What are James J. Hill's predominant qualities? Remarkable foresight, rugged honesty, intense concentration and application, and adeptness in applied mathematics are salient characteristics of the man. In the light of these qualities and what he has accomplished, let us try to find his place in the world of efficiency.

In the analysis we discover that he embodied all of the methods of Harriman, and did all that Harriman did, and more. He had the initiative and the courage to break new ground, and yet he was wonderfully practical, precise and painstaking.

Then, he reduced grades and abolished curves,

installed adequate and efficient rolling stock, mammoth engines and safety appliances. All of these innovations, as with Mr. Harriman, saved labor (number 2), saved material (number 3), saved land (number 4), saved time (number 5), augmented material (number 7), eliminated obstructive elements (number 12), eradicated deleterious influences in men and material (numbers 9 and 11), and the general results, better service and melioration of environments (numbers 14 and 15).

But, in addition to all this, Mr. Hill interested himself in the farmers, introducing improved varieties of stock and seed and the education of young men in the agricultural science. These efficiency methods are represented in number 8 (land-augmenting) and number 10 (eradication of diseases in land products). We have here in Mr. Hill all of the fifteen efficiency methods except numbers 6 and 13 (labor-augmenting and advertising). It is taken for granted that both Mr. Hill and Mr. Harriman advertised extensively, as well as adopted other means and methods of promotion, and there is no reason to believe that both did not make use of efficiency method number 6. For, despite all that the efficiency experts may say, their methods are as old as man himself. We have in James J. Hill all of the fifteen "expression-forms," efficiently embodied and applied to practical life.

We discover also in Mr. Hill a remarkable example of the reacting and interacting benefits accruing to altruistic practices.

Having taken a general survey of the efficiency methods employed by the so-called captains of

industry, suppose we get a little closer to earth and endeavor to analyze the methods adopted by the ordinary business man in every-day life. As before explained, the person engaged in industrial enterprise must deal with both machines and men, materials and records, money and accounting, and, therefore, has a more complex and difficult task than the man of independent activity, such as an inventor, or the professional man, tradesman or laboring man. Among the latter are clerks, accountants, bookkeepers and a variety of specialists, each having an economic function corresponding to one or more efficiency methods, which will be pointed out as we go through a day's work of, say, a dealer in general merchandise in a country town.

The proprietor of such a store, in which you can purchase anything from a thimble to a threshing-machine, upon arriving at his office one morning, found his manager in a "stew" and a quandary over a lot of Civil War pictures which were purchased some time before, but for which no market could be found. When his attention was called to this state of affairs, the proprietor recalled that there was to be a Grand Army reunion in the city the following week. He at once sent for his advertising man, who, of course, represents efficiency method number 13, and instructed him to prepare an ad for the newspapers directed especially to these veterans, offering them special inducements in the purchase of the pictures (efficiency method number 1). To accompany the ads there was to be a near facsimile of a five-dollar bill, which was to be accepted as part payment for the pictures. The

advertising man went to a phonograph in the establishment (efficiency method number 5—time-saving) and dictated the advertisement as the powers of his imagination conceived it should be, whereupon his stenographer, who is at once a time-saver (number 5) and labor-augmenter (number 6), having acquired the "touch" system and other short methods of typewriting, took the dictation from the phonograph and transcribed it on the typewriter, which is a labor-saving device (number 2). In preparing the copy for the various papers, duplicating carbons were used (time and labor saving devices), and in despatching the letters containing the advertisements, stamping, folding and sealing machines were brought into play (all time and labor savers).

These advertisements in due time reached the eyes of the Grand Army men, who could not resist the temptation to make use of the five-dollar device, with the result that the pictures were sold at a fair margin of profit.

The credit man, who, as a conservator of money, represents efficiency method number 3 (material-saver), came to the proprietor and made a report on a certain doubtful risk. The latter instructed the bookkeeper, who, as an accountant, is a labor and time saver (numbers 2 and 5), to prepare a statement of the doubtful creditor's account. This was done by means of adding and calculating machines (both time and labor savers). After full investigation it was decided to secure the debt with a mortgage on the debtor's property, which was accomplished just before the latter made an assign-

ment. This transaction embodied efficiency method number 3 (material-saving).

Upon reading the papers that morning, the proprietor discovered that a cold wave was approaching from the West, and as old mother hen is temperamentally affected by the weather, he summoned the purchasing agent before him, with directions to buy up all the eggs in the surrounding territory. The purchasing agent, whose function it is to buy things cheap, is a material-saver (number 3). The selling agent and salesmen, who represent efficiency method number 7 (material-augmenters), as well as number 13 (promoters), were instructed to raise the price of eggs, which resulted in a general augmentation of outgoing merchandise of that character.

About this time a representative of the loan department, who is a material-augmenter (number 7), appeared at the office and reported an opportunity offered to effect a loan of some non-working capital at a more attractive rate of interest than it was then bringing. The discount man, who is a material-saver (number 3), reported that the time was about to expire on a number of bills on which a certain per cent. discount was allowed for cash. The discounts were made and the "material" saved.

Two farmers appeared at the store at this time, one of whom wanted ditch-digging and tile-laying machines for the reclamation of some swamp land, and the other wanted a panacea for an epidemic that was decimating his drove of swine. The proprietor directed the former to the department where the latest improved machines of the kind desired

were to be had, and the purchases were made (efficiency method number 4—land-saving). To the other farmer the proprietor recommended a new discovery for the cure of the diseases affecting his hogs, which, after being tried, was found to be effective (efficiency method number 10—eradication of diseases in land products).

A third farmer asked for a fertilizer adapted to a particular kind of soil. Upon the advice of the proprietor of the store, a fertilizer was purchased and applied to the land with great success (efficiency method number 8—land-augmenting).

The manager reported the arrival of a large consignment of a new style of shoes, whereupon the proprietor sent for the window-decorator, who is efficiency method or expression-form number 13 (advertiser), and directed him to make an attractive display of the shoes. The decorator conceived the novel idea of so arranging the mirrors in the windows as to reflect the feet of the passers-by, who, upon being reminded of the shabby and out-of-date styles of shoes worn, would be impelled to purchase the latest patterns shown in the display.

A large number of sales were made as a result of this experiment, and as the cash was received it was rung up on the cash register. Now, what efficiency method does the register represent? Not time or labor saving; on the contrary, it consumes time. It evidently comes under the head of number 12 (eliminator of waste in the operation of a business; avoids errors and mistakes on the part of the cashier). The copy-press and all recording devices also come under this head. They preserve records,

thus eliminating wrangling and disputes over business transactions.

The proprietor observed that he was not securing as much of the country's business as he might, owing to inadequate accommodations for the farmers' teams. He formulated a plan of entering into a contract with the most centrally located liveryman to redeem "standing-in" coupons, which he would issue to certain farmers on his mailing-list. By this arrangement all persons purchasing a dollar's worth or more of goods would be entitled to livery care for one horse. This scheme, which embodied efficiency method number 15 (melioration of environments), had the desired effect, it being found that the profits from the increased trade more than compensated for the extra expense incurred.

The proprietor observed that a number of his employees were becoming languid and careworn, apparently from a lack of physical exercise. He accordingly had a gymnasium constructed in connection with a rest and reading room, to which all were granted free access. A general improvement both in the physical and mental conditions, as well as the *esprit de corps*, of the employees was secured from the introduction of this innovation. This was efficiency method number 9 (eradication of deleterious influences in the laborer).

Having read and heard a great deal of the results accomplished by "efficiency experts," the proprietor entered into a contract with one to "standardize" his business. After a vigorous search for "leaks," many improvements were made in the arrangement of the store fixtures and goods, result-

ing in an increased storage capacity (number 7—material-augmentation); also facilitated the transaction of business (numbers 2 and 5—labor and time saving), and eliminated waste in fuel and other commodities (number 3—material-saving), and by the introduction of a system of prizes for the salespeople selling the most goods, augmented the work of the force (number 6—labor-augmenting). The expert also remedied defects in machinery (number 11—eradication of deleterious influences in material).

The proprietor had adopted a universal practice of discarding goods of an inferior quality when a better product was put on the market, which is represented in efficiency method number 14 (sale of a more serviceable or attractive article).

The alluring and compelling nature of advertising (efficiency method, or, rather, expression-form number 13) is of such comprehensive far-reachingness in economic life as to call for special attention. In modern business, advertising has developed into a science, and it is estimated that upwards of \$500,000,000 is spent annually in the United States for newspaper and other forms of advertising. As advertising, in print form, represents only one phase of business promotion, the actual outlay is far in excess of the figures quoted.

What is the purpose or function of advertising? Evidently to bring the buyer and seller together. It holds a position in the commercial world analogous to the spark that sets off the explosive in a mine, or sends the Hertzian wave across the seas. In each case economic factors are brought together,

which otherwise would have remained inert and unproductive.

But the ever-present iconoclast will doubtless ask, "How can a non-productive function like advertising produce wealth? It only facilitates the transfer of commodities from one person to another—possessing naught of a creative nature." Admitting the force of the criticism, is it not possible that a mutual benefit may accrue from an interchange of commercial products? A merchant advertises a more attractive or serviceable article of wear. Does the purchaser lose anything by the bargain? Or the farmer reads of a labor-saving device, which he purchases and applies to his daily work. Does he not benefit by the transaction?

But the buyer and seller are not the only ones who reap a benefit from advertisement, for the paper which publishes it is also rewarded, and, naturally, all who are employed on the paper are indirectly benefited. And the benefits do not end here. As a result of securing a large amount of advertising, the publisher is able to sell his product for a nominal sum—from a penny up. Here is where the great common people come in for their share of the profits. Suppose the original purchaser of the thing advertised is "stung," there still remains a beneficent economic residue, and he should be consoled with the thought and proudly point to himself as a public benefactor!

Advertising mediums include newspapers, magazines, trade journals, catalogues, almanacs, pamphlets, circulars, posters, handbills, billboards, electric and other varieties of signs, street-cars, etc.,

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etc. The advertiser must use his judgment, not only in the preparation of the advertising matter, but also in the selection of the medium.

Other means of advertising and promotion are through personal solicitation and representatives or salesmen. Millions of dollars are spent annually by drummers in traveling from point to point and in banqueting and feting their prospective customers. For example, a certain real-estate promoter spent \$100,000 in the charter of a special train to convey a number of bankers to the Canadian Northwest.

In addition to all these methods there are a large variety of advertising schemes which have been put into practice. Window displays are in universal use, and, then, there are all sorts of prize contests, guessing contests, trading stamps and premiums, novelties and ingenious devices innumerable. There are advertising agencies which prepare ads and insert them in desirable mediums for a large coterie of customers, and the general demand for a good ad writer is so great that the salary commanded is among the highest of all "literary gents."

And all of this requires great imaginative and visionary powers and faculties. When Napoleon caused the names of his dead soldiers to be inscribed on the face of Pompey's Pillar, some one criticized the act as "a mere bit of imagination." "That is true," replied Napoleon, "but imagination rules the world."

Lorin F. Deland, writing in the *Atlantic Monthly* on "Imagination in Business," after enumerating a number of instances illustrating the title, says: "If

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space permitted, it would be worth while to enumerate the great variety of problems which arise in business. To every one of these problems, imagination, if you will employ it, will open the door. It is not enterprise, nor thrift, nor industry, nor sagacity, nor courage. Nor can all of these qualities combined supply the place left vacant by the lack of imagination. They each have their value, and by any of these roads a man may win success. But the faculty of which I conceive makes him capable of undertaking any business."

In illustration of the power of imagination he cites an example, among many: Two peddlers were standing side by side selling toy dolls. One of them had a queer, fat-faced doll, which he was pushing into the faces of passers-by, giving it the name of a well-known woman reformer. His dolls were selling rapidly, while the man beside him, who really had more attractive dolls, was doing comparatively little business. This was observed by a European publisher, who, calling the second peddler to one side, said: "My friend, do you want to know how to sell twice as many dolls as you are selling now? Hold them up in pairs, and cry them as 'The Heavenly Twins.'" It was at a time when Sarah Grand's famous novel was at its height, and success was instantaneous. Within an hour the woman-reformer doll peddler gave up the fight and moved away.

Dramatized selling points are now being exhibited by moving-picture machines. The object is to reveal superior methods of manufacture, and the application has solved one of the baffling problems

of the retailer—that of giving his clerks a factory background and an acquaintance with manufacturing processes to illuminate and to give convincing quality to their selling talks.

Department stores have imitated hotels in the introduction of parlors, letter-writing rooms, restaurants and, in some instances, musical devices to entertain their patrons. More than any other class of men, sales-managers have drawn freely upon other fields for ideas and methods in handling their temperamental forces. From sport to war, they have adapted the principle of team or corps competition, pitting groups of salesmen against other groups. This was one of the effective methods adopted by Colonel Goethals in building the Panama Canal.

The “package” system keeps out dirt and flies, makes trademarks possible and substitution almost impossible, thereby justifying enormous and profitable advertising campaigns, and takes control of the market from jobbers and retailers and accomplishes a score of other economic benefits.

An Indiana laundry advertises, “The slowest laundry in the State.” It emphasizes the advantages of slow laundering, in avoiding “wear and tear.” A grocer doubled his sales within two years by a strenuous campaign for telephone orders. During an epidemic of disease in his town he installed double telephone service and advertised extensively that no customer need expose himself nor endanger others. No opportunity to advertise his telephone number is overlooked. On his monthly statements the telephone number is all that appears at the head,

and he frequently adopts the same plan in signing advertisements and letters.

And, as an example of the uses of imagination in the humblest occupations, and as a fitting close to this chapter, we will quote what Jean Millon, chef of the Ritz-Carlton Hotel, New York, said (as reported by the New York *Herald*) when fined \$3,000 by the courts for classing the members of his profession as artists, rather than as common laborers:

"Mais, Monsieur," said the incomparable chief cook when I saw him in his viand atelier constructing a confection, sculptor-fashion, and limning in delicate violet hues, even as would an impressionist painter: "I give you my word that I have reason to say that in Paris a cook is no mere mechanic, a contract laborer. I admit I brought three fellow-craftsmen—shall I say artists?—three cooks, if you please, and I find them most costly. And yet, although your laws here do not say so, may not the time come when it will be said that the cook who gives to his work the grand spirit, the imagination, the thought and study that one must to please a public which grows more discriminating, is something more than a workman?"

After referring to the great cooks of France—Vatel, Soyer, Escoffier—"cook, if you please, but scholar and artist"—and Benaro, he adds:

"Voilà—I have here flour, eggs, baking-powder, butter. There is not far from here a studio building. In one room I see a man with a lump of clay; in another, one with a frame on which cloth is spread, and he has brushes and paints. Common-

place materials, you say. What is more common than the clay of the sculptor, than the colored minerals of the painter, and the grand grain of the cook?

"If one models clay without imagination, or molds it after a set pattern, he is a mechanic; if he puts his soul into his work and originality, he is the artist. If one without skill mixes flour and water and other articles, he may be called the workman, but he is the true cook when he invents and prepares that which is a delight to mankind, and that out of the most ordinary material. So I say that a cook may well be an artist, just as the sculptor who models, as the painter who puts pigment on cloth, the craftsman who mounts the jewel with artistry."

But here we find our great cook encroaching upon the following chapter, which is to be devoted to forms of wealth, as found in expressions of the beautiful and artistic! At any rate, Millon's dissertation affords another example among the thousands wherein the useful and the beautiful, the commonplace and the artistic are "hopelessly intermingled."

VIII.

WINSOME WEALTH.

In previous chapters were set forth some of the ways in which representatives of the various arts, trades, professions and pursuits create wealth in connection with the so-called economic or industrial enterprises. But, after all, he who contends that this aspect of life is the biggest and best has a very sordid and unimaginative outlook on the world in general and on humanity in particular.

Nature does not spurn the beautiful, the grand, the dramatic; nor does she despise the awesome, or the harmonies and humors of life. Her devotion to the beautiful and grand are shown forth from the towering Himalayas, the Andes or the Rockies; from the peaceful lakes and sinuous rivers to the delicate traceries of a leaf, a flower or a crystal, while dramas, tragic and deadly, are being enacted on the forest stage with the lions, jaguars and rhinoceri as stars; and, ever and anon, from the upper wings, or "flies," the mighty Jove hurls down alternate shafts of fire and flame to the ominous roll of his aerial drum. The comedies may be performed under starlit skies to the accompaniment of winged orchestras, and the cast of characters may include the laughing hyena, the graceful gazelle and the playful squirrel.

Surely, to the person who has witnessed the

glories of a New England Indian summer, with its riots of tints and inimitable imagery, the essential æsthetic *nature* of *Nature* is apparent. And it was not intended that man should devote his life to the pursuit of the useful, with a total disregard for the artistic and the joyous. Man has desires and aspirations above the (we were about to say animal, but even these have a sense of mirth and beauty)—let us say, then, clod of the field. These desires demand satisfaction, and those who can gratify them are entitled to reward.

But there are those who would tear the stars from the firmament and silence the music of the spheres.

If only the utilities are to be considered in economic discussions, what are we to do with the great artists, Titian and Michael Angelo? the great actors, Booth and Jefferson? the great musicians, Handel and Mozart? the great poets and writers, Homer and Milton, Virgil and Shakespeare? Then, what are we to do with the thousands of latter-day authors, artists, actors, musicians, sculptors, architects and all others who have contributed their part in making the wondrous world of the twentieth century? If only the useful things are of worth, and all the rest pernicious luxuries, let us strip the world of the latter and see what is left.

If, upon arising, you should call for the morning paper, the maid would politely inform you that the daily *Sun* (*Moon* or *Star*) has been stopped by order of the utilitarian economists. You are invited out to the breakfast-table, and, upon being seated, you ask for an orange or a canteloupe. You are

gently but firmly informed that these luxuries have been dispensed with, and likewise coffee, tea and cocoa, and all forms of modern breakfast-foods. After partaking of a breakfast of fried eggs or meat and bread (and water), you summon your automobile to convey you to the office. Your chauffeur informs you that the economists have put the ban on the auto business. Well, you conclude to take a street-car, only to find that they have all stopped running—utilitarian economist again.

Upon arriving at the office, after a long walk, you find the once palatial suite of rooms stripped bare, with the exception of a few old-style desks. There are no telephones, no typewriters and none of the devices which were wont to expedite the day's work. Feeling somewhat blue, you put on your hat and proceed to the elevator (which has stopped running) and walk down several flights of stairs with the purpose of taking a stroll and a smoke. You find that all of the cigar-stores are closed. You enter a drugstore to purchase a "soda," only to discover that the fountain has "dried up." You ask for some chewing-gum as a compromise, and are met with a blank stare from the proprietor, who tells you that the economists have placed gum on the forbidden list. Upon observing the showcases, you see that they have been robbed of all forms of luxuries—perfume and powder, candies and confections, mirrors and manicure sets.

The streets at this time were becoming thronged with people of both sexes. Where has all their

finery gone—their silks and satins, their flashy jewelry and picture hats? All are garbed in the plainest of clothing, without color or ornament. You turn your attention to the men and find that a like transformation has taken place. All are clad in rough garments, void of garnishment of any sort—no neckties, no silk hats, no fancy vests or shirts or tan shoes.

Proceeding further, you attempt to enter a moving-picture show, but find the doors barred. Discouraged and discouraged, you rush toward a corner saloon, but meet with a like rebuff. You are getting wild; you make a dash for a hotel, only to find everything closed, with the exception of the dining-room, where only the most substantial of edibles are being served.

As you walk along the streets, you notice that all confectioneries, haberdasheries, millinery and fancy dry-goods stores, jewelry shops, bookshops, music-stores, toy-stores and all kinds of amusement places are closed. You try to enter the public library and then start for home. When you arrive where your home was, you find nothing but a one-story shack, built of the most inexpensive materials. You enter the house, and, after being greeted by your wife, who, in her ancient garments, you hardly recognize, take a look around. All of the mahogany, walnut and oak furniture has been removed and replaced with pine and poplar pieces of the simplest character. The pictures had been taken down from the walls, the piano and phonograph removed from the parlor, and the books from the library. All of the costly china, the silver plates, knives and

forks have been exchanged for common steel cutlery and the plainest of dishes.

As a last resort, you decide to take the children to the Zoological Gardens to see the animals. In passing through the fine residential suburbs you discover that all of the beautiful buildings and lawns have been destroyed, and that in their places were unpretentious domiciles and unkept and flowerless lawns. The church buildings, hospitals and other public institutions had suffered a similar fate, all forms of elaborate architecture having been reduced to the simplest styles.

You arrive with your children at the "Zoo." Here at last, and at least, you will find solace and enjoyment, for are not all these animals—the elephants, the lions and the birds—Nature's offspring? No luxuries here. But you are informed by the gatekeeper that you can observe these animals all you like in their native heath, but to do so in civilized places is a wanton waste.

Disconcerted, discouraged and disgusted, you conclude to remove to a foreign country. After having gotten your belongings (what is left of them) together, you start for the depot with the intention of taking the Chicago & New York Limited for the latter city. Arriving at the station, you find the doors closed and the gates to the tracks barred. A simple sign read, "Closed by the Economists."

You hunt around for a horse and wagon with which to make the trip. Before starting you tried to telegraph to the steamship line for reservations, but was told that the line was not working. Hav-

ing arrived in New York, you hasten to the steamship office, only to be informed that the boats had been stopped by the utilitarian economists. "What's the use of going to another country, when there is plenty of vacant land in this country to cultivate?" they query. And echo answers, "Back to the farm."

"At any rate," you say, "we will take a look at Broadway." You started up—but, what's this? There wasn't any Broadway there—nor New York. But there, in all its glory, was New Amsterdam!

In your dreams that night you had a vision of "America" as played at the Hippodrome, wherein are pictured and portrayed the wonders of the East and West and the Panama Canal, the last and greatest wonder, and that after the show you visited the Ritz-Carlton, presided over by our famous chef, and there partook of viands rich and rare—and then you made the mental reservation: "This is all a fake; there are no such things."

But we, the non-economists, know that there are such things, for have we not seen them in reality as well as in pantomime? And how fortunate it is for us all that the dream is a reality. It is good for us that such things be, for at least four reasons:

First, from a general economic viewpoint, it is good for us, because civilization, as manifested in the world to-day, is a product of these forms of creative and dynamic wealth. In the foregoing parable we allowed you to retain some supposed necessities that are really luxuries—such as plain clothing, household furniture and knives and forks. These are all forms of luxury, for they can be dis-

pensed with, as with primitive man and with peoples in certain parts of the world to-day.

If, then, some of our ancestors had not desires and aspirations above their fellows, there would have been no progress. In some instances these dynamic forms of wealth may have been called forth by a demand from a portion of the populace, while in other instances men of supernormal genius may have invented a device or produced a work of art which answered a need or caught the fancy of the proletariat. The automobile and the flying-machine are modern examples of the first kind. The former answered a half-century of appeals for a practicable motor-car, while the latter was the realization of the dreams of centuries. Instances of the second class may be found in ancient and modern artists, architects, sculptors, poets and philosophers. All of these creative geniuses open up new fields of labor, and in that manner confer an economic boon upon the great industrial army.

Second, it is good for the creative geniuses that such things be, because it affords them a remunerative outlet for self-expression. In the olden days—when Greece was in her glory and the great Roman Empire was in the ascendancy—some of these creative men, sculptors, artists and architects, found remuneration for their labors as expressed in concrete form, but the writers, poets and philosophers found it necessary to eke out a living as best they could. What a harvest for the authors (and publishers) would there have been had the art of printing been discovered in the times of Homer, Virgil, Æschylus, Socrates or Plato!

If some would contend that all this winsome wealth does not constitute productive wealth, the answer is, it is productive of a living to millions.

It is like the story of the Irishman thrown into jail without bond or bail, who, upon being informed by his attorney that they could not legally put him behind the bars, said: "Faith and begorra, I'm here, annyhow!" If it be asserted that those engaged in intellectual pursuits would not be considered producers of economic wealth under other conditions—for example, in a country where the soil is unproductive and where primitive methods of agriculture prevail—the answer is that conditions as they obtain to-day can only be considered. It would be necessary to go to some other world—a few isolated spots excepted—to find conditions similar to those stated. The earth on which we live is welded by bands of steel and laced with wire into a harmonious and interacting whole, the various parts of which are in constant intercommunication. Commerce has been freely developed between all sections, and if there is a famine anywhere the fact is known at once, and ships and trains are despatched immediately on their errands of relief and mercy.

Just as an illustration of the manner in which new kinds of wealth are produced and how things uneconomic have become commercialized, a citation may be made of the theater. With the Greeks it was simply an exponent of the drama or æstheticism; in the Middle Ages it was adapted to religious uses, while in the early English life it was transformed into a royal or state form of entertainment. It has now become thoroughly commercialized. And, as a

further illustration of the stupendous proportions to which these dynamic structures have grown, John C. Freund, editor of *Musical America*, estimates that \$600,000,000 is spent annually in the United States for music alone. In this estimate are included operas, concerts, church music, orchestras, bands, musical instruments, books and publications, and academies of music. He adds:

"The importance of these figures will be disclosed only when we come to analyze them. They mean that we spend three times as much on music as we do on the army and navy, or as we do on the postal service; that we spend on music within twenty per cent. of the value of the hay crop, which is the biggest crop of the country, and within fifteen per cent. of the cotton crop, which is the next largest crop." If this is true of music, it is clear that the wealth evolved from books in general, magazines, papers and things theatrical, runs into billions.

Another illustration of the evolution of the growth of dynamic wealth is found in modern baseball. This national sport, which has grown to stupendous proportions, was non-economic in its beginnings, whereas at the present time thousands are supported by and on the rapidly ascending economic structure. Salaries in excess of \$10,000 are frequently paid to players who are valued anywhere from \$25,000 to sums representing unpurchasable commodities. (Will the economists who contend that man is not wealth please explain the status of the ballplayer?)

Third, it is good for all of us that these luxu-

ries exist, for they satisfy intellectual and physical requirements. All are endowed with mental qualities—more or less developed—appreciative of the beautiful, the humorous, the dramatic, the artistic, the picturesque and the sublime. If there be aught of poetry, music, or of inspirational thought or eloquence, let us aspire to these also. It is just as necessary that the intellectual and æsthetic sides of our natures be fed and developed as the physical. The latter not only requires food of a substantial quality to build the body, but also of a pleasing quality to satisfy the sense of taste. All forms of edibles (not harmful) which supply these cravings are of economic worth.

The physical body also demands recreation. All kinds of harmless amusements—golf, cricket, baseball, tennis, hunting and fishing, billiards, calisthenics, and many others—are beneficial and wholesome. What a tame world this would be if all art, beauty and recreative pursuits were prohibited by the utilitarians!

Fourth, it is good for us all that such things be, because all of them, if moderately cultivated, have a subtle influence upon our natures and thereby enhance our economic worth. Edmund Burke and other discoursers and writers on æsthetics say that beauty has a physiological effect; that the relaxation of the nerves by appropriate stimuli has a soothing effect, which is the basis of æsthetic pleasure. All are familiar with the dictum that good cheer promotes digestion and that worry retards the process. It follows that anything which calls forth a sense of satisfaction or pleasure promotes health. If the

wearing of fine clothes, or the observance of a sunset or painting, creates a more pacific frame of mind, and if, by reason of that, a person accomplishes better work, there is an apparent economic gain. But, as we are approaching the twilight zone between wealth and non-wealth, this line of thought will not be pursued further, however enticing it may be.

It will not be questioned that the recreative pursuits mentioned enhance economic efficiency by increasing the physical, and, consequently, the mental, health of the worker. Of course, the test of all efficiency methods is the actual results produced. That the results are nil in a tramp or non-worker can not be gainsaid; neither can it be questioned that there is no economic benefit in cases where other influences, voluntary or involuntary, offset all the gain acquired by recreative exercises.

It will be granted that, in view of the great diversification of the arts and industries, growing out of a wider economic development, the shibboleths which are being carried from lip to lip, and from printed word to printed word, "Opportunities are getting fewer" and "Men are being made into machines," are proven false. Never in the history of the world have there been such opportunities for people of the most diverse talents as there are to-day, whether that talent be small or great. As regards the second fallacy, the ridiculous ludicrousness of it will be apparent when we stop to consider what kind of a talent or quality of worth in man can be imitated or replaced by a machine. A labor-saving device can only perform the most mechan-

ical forms of labor, and, therefore, it is the "bitingest" of sarcasms to say that a man is robbed of his personality by these machines. What are the extraordinary inspirational elements involved in the making of a pair of shoes or pants, or in making a tin can or a tin pan?

In fact, is not the contrary of the statement true?—that these mechanical devices set free the mind of man, and permit it to roam at will on earth or among the clouds. The erroneous and erratic idea that the introduction of labor-saving machinery tends to put man on the same level and to deaden his intellect, is disproven by the actual conditions and occurrences in modern industrial life.

Having considered some of the forms of "win-some" wealth, as created by man, let us turn our attention to those found in nature. Before doing so, it would be well to note that there are forms of wealth partaking both of the qualities of dynamic and national wealth. We refer to the ruins and other archæological attractions to be found in the Old World—in Rome, in Greece, in Egypt and in western Asia. These forms of wealth can not be said to be exclusively dynamic, for they are but the relics of once proud races; but it may be said that the attractive elements embodied in them are composites of man-made and nature-made wealth. Father Time and his able assistants, fire, wind, frost and water, have supplemented man in creating these ruins, which attract millions in wealth.

Other attractive forms of wealth which combine, in some degree, both the national and dynamic forms, are cities with their beautiful natural sur-

roundings and great architectural wonders, such as are found in Paris, London, Milan, Constantinople, Petrograd, and many other places.

We now come to the pure national "winsome" forms of wealth. Among these are nature's works of grandeur, sublimity and beauty—the mountains, the lake, canyons, rivers, glaciers, forests and a great variety of flora and fauna. The same rule applies to these forms of potential wealth as to all others; namely, they constitute wealth when they produce wealth. It is necessary that the creative element of mind enter into the alchemic crucible before these attractions can be transmuted into gold. These natural beauties and wonders must be rendered accessible to the public—by means of railroads, navigable waterways, trolleys or automobile roads—before an economic benefit can accrue. Prior to the days of rapid transportation, the economic benefits derived from these forms of national wealth were inconsiderable, but at the present time hundreds of millions are expended by tourists in viewing them.

Enos A. Mills, writing in the *Saturday Evening Post*, says: "Last year [1912] Europe did a travel business of five hundred million dollars; three hundred and fifty millions of this were spent by Americans. America has scenic resources far superior to those of Europe. Such is the varied and striking nature of our scenery and such is the nature of the traveler that we have but to exploit these resources, and add accessibility and entertainment to them, to have a more productive travel industry than that of Europe.

"Switzerland is an excellent illustration in this connection. It had an array of scenery. This scenery was made pleasantly accessible by means of good roads. The traveler came. He was graciously received and comfortably entertained. The following year he returned, accompanied by a number of friends. Thus, in a few years, Switzerland, with an area of only fifteen thousand square miles, by exploiting its scenery, built up a travel industry that brings it \$200,000,000 annually.

"In the nature of things, the United States should have a travel industry of vast economic importance. We have numerous and extensive scenic areas of unexcelled attractiveness, together with a majority of the world's greatest scenic wonders and wonderlands. All these, too, repose in a climate that is hospitable and refreshing. Our established scenic reservations, or those which may hereafter be set aside, are destined to become the basis of our large scenic industry. These reservations embrace thirteen national parks and twenty-eight national monuments."

The writer gives a list of these reservations and then continues: "Here is a splendid array of nature's masterpieces to lure and reward the traveler. In mountain peaks there are Grand Teton, Long's Peak, Mount Whitney and Mount Rainier; in canyons, the vast Grand Canyon and the brilliantly colored Yellowstone; in gorges, that peerless pair, the Yosemite and the Hetch-Hetchy; in trees, the unrivaled sequoias and many matchless primeval forests; in rivers, few on earth are enriched with scenes equal to those between which rolls the

Columbia; in petrified forests, those in Arizona, Yellowstone and Yosemite; in glaciers, the Blackfoot, the Nisqually and the Arapahoe; in medicinal springs, there is an array of flowing life-extending fountains; in wild flowers, the mountain wild flowers of the West are lovely; in wild animals of interest, the grizzly bear, the beaver and the mountain sheep; in bird music, that which is sung by the thrushes and canyon wrens silences with melodious sweetness the other best songbirds of earth. In these varied attractions of our national parks we have ample playgrounds for all the world and the opportunity for a travel industry many times as productive as our gold and silver mines—and more lasting, too, than they.”

The president of the Bank of Japan, K. Takahashi, is quoted by Clement in his “Handbook of Modern Japan,” as saying: “Japan is especially favored by nature with beauty and picturesqueness of scenery, and healthful climate, and has appropriately been called the ‘Paradise of the East.’ We will turn this country into a grand park of nations, and draw pleasure-seekers from all parts of the world. We shall build magnificent hotels and establish excellent clubs, in most splendid style, to receive the royal visitors of Europe and the millionaires of America.” The author adds: “And while the objection has been raised that this is not a very lofty role for Japan, it is claimed that it is seen to be about the role that France, the great nation of artists, is content to play in Europe—making herself infinitely beautiful and infinitely charming.”

In view of the fact that other nations are recog-

nizing the economic value of national forms of wealth, it behooves the United States to turn her attention to this vast mine of beauteous wealth in order that she may not be "left at the post" by rival countries.

IX.

DISTRIBUTION OR OPPORTUNITY?

Much has been written in recent years concerning the unequal distribution of wealth, and to remedy this supposed inequality all sorts of panaceas have been prescribed, ranging from rank confiscation to slow methods of extirpation by cumulative taxation processes. This agitation has progressed so far as to involve the seats of the mighty, or near mighty. It is not necessary to mention names, as all can recall notable recent instances of more or less irresponsible ebullition.

In the consideration of this question, two or three fundamental propositions—generally overlooked—will be discussed. The first proposition pertains to the thesis of this treatise, the creative aspect of wealth. The second proposition has reference to the necessity that capitalists make use of their surplus wealth, and that, in making use of it, they necessarily create opportunities for labor. The third proposition grows out of the first two; namely, opportunity is preferable to charity.

In the discussion of economic questions, the word "opportunity" should displace "distribution." All can agree on the proposition that to labor is man's most treasured boon, and it logically follows that anything which affords him such an opportunity is of more worth than the distribution of the

so-called "surplus" wealth. For example, it is better that the entrepreneur devote his non-working capital to new projects, than to divide it among those who may possess more of this world's goods than others. It is also plain that the more opportunities offered, the greater will be the demand for labor, and, following the law of supply and demand, wages will thereby be enhanced.

The process of distribution is as if the farmer should go into the orchard and pluck the green fruit for division among those who have less, or as if the gardener should pick the flowers in the bud for the same purpose. Perhaps the analogy would be more complete if the farmer or planter should dig up his fruit-trees—say orange—and give them to residents of a northern clime, or as if the florist should take his flowers out of the hothouse in mid-winter and bestow them upon those who desire to plant them in their gardens. In these cases, as in the distribution of wealth, are found dissipation and destruction of intelligent concentration of productive capital.

That capital is required in the conduct of industrial enterprises can not be denied. Neither can it be denied that, in general, this capital is in the hands of the "doers" of the world. It is not to be inferred that this capital is always possessed by the doers or captains of industry. There are some idle capitalists, but this need not concern any one as long as their money is working. These capitalists are continually looking for new places for investment, for new projects to promote, and to accomplish these purposes the capital is placed in the

hands of the creative forces, the entrepreneurs of the economic world.

A tendency has recently developed in magazine and newspaper writers of wide reputation to advocate the confiscation of property of the idle rich. This propaganda is as fallacious as that of the socialist, who would confiscate all property. All should rejoice in the wealth of the wealthy—if acquired honestly—for they can not eat it, and they will not (literally) burn it; therefore, they must spend it or invest it, and in so doing provide sustenance and opportunities for labor to the less fortunate.

Then, again, the more benevolently inclined of these capitalists are in the habit of donating large sums to philanthropies of various kinds—educational, religious, charitable and general social service. If their wealth is taken away from them, who will contribute to these benevolent causes?

It is axiomatic that the more complex the civilization, the greater the opportunities for the laborer. Such opportunities, for example, in a distinctively agricultural community are very limited. If only the necessities of life are produced, economic activities are placed on a level with those of such countries as China or the South Sea Islands. But, some one may ask, why should we desire, or labor for, more than the necessities of life? Wherefore all this struggle for the non-utilities—the artistic and the hedonistic, the dramatic and beautiful? Well, does such an one presume to criticize Mother Nature? Does she not revel in these things, and is she not the inspiration of all arts?

There is another argument in these latter days equally as forcible for the dynamic forms of wealth. We refer to the introduction of labor-saving machinery and other efficiency devices in agriculture and in the manufactures. The installation of this machinery and of these land-augmenting processes in agriculture creates a condition differing only in degree to the southern clime referred to under "Capital," where but little labor is required to sustain life. In each case the actual labor involved, as compared with the results, is insignificant, and it can readily be seen that economic conditions gradually tend toward the minimizing of physical labor, with a correlative augmentation of mental labor.

And all of this forms a potent reason why economists should modify the teachings in their textbooks. Seligman, in his "Principles of Economics," makes this statement:

"The apologists for luxury, for example, have, from time immemorial, sought to justify themselves by the plea that luxurious expenditure is beneficial because it affords employment to labor. The merest tyro in economic reasoning, however, will at once perceive the weakness of this hoary argument. If luxurious expenditure is productive simply because it employs labor, the accidental breaking of a window-pane or the wanton destruction of a growing crop is also productive in so far as it will require labor to repair the damage. The fallacy clearly consists in the assumption that wealth spent in luxurious outlay would not otherwise be devoted to production. Obviously, however, if the spendthrift

chooses not to waste his funds, they will take the form of purchase of securities, in investment in some enterprise or of a cash balance in bank; and in each case they will be devoted to production and thus give employment to labor."

Waiving the writer's inability to distinguish between the so-called luxuries and destruction, he is begging the question when he assumes that the surplus money will be invested in some productive enterprise. It might be hoarded up. Then he would have to be very careful what kind of an enterprise he invested his money in, for nearly all such are devoted to the manufacture of some of the forms of the so-called luxuries. Even textile houses make all kinds of gaudy and artistic stuff on which the orthodox economist would place a ban. The unanswerable reply to the argument is, that civilization is made up of a superposition of these luxuries, the dynamic forms of wealth. It is impossible to differentiate between the various forms of luxuries, except in a manner hereafter explained.

In answer to the argument relative to the broken window and damaged crops, it is sufficient to state that both are productive forces if they result in a more equable distribution of wealth, affording employment to those who have less. If the owner of the house with the broken window is a man of wealth, surely it harms no one, but, on the contrary, benefits the glass manufacturer and his employees. Windows are fragile, and their ultimate destruction is as certain as that an orange will be consumed by man, animal or the elements.

Another argument in favor of the "destruction" of property is that insurance companies are founded upon such destructions, yet they have been one of the most productive forces of a nation. The comparatively small amounts collected from those insured have become millions in the hands of the insurance companies, which have been loaned to the captains of industry and in that manner have aided and encouraged the development of the resources of a country. It is therefore apparent that a loss to an individual does not necessarily signify a loss to the nation as a whole.

The economic exceptions in the so-called luxuries already referred to comprise those hedonistic or deleterious practices and pursuits which generally result in the deterioration of man, mentally and physically. Classed with these are the manufacture, sale and use of intoxicants, opium, cigarettes and other harmful commodities which destroy the economic, as well as the physical and moral, worth of the individual. While it is true that all of these things, at first-hand, have an economic value, yet their ultimate effect is so detrimental and destructive that the economic strength of a nation becomes sapped. Who can estimate the loss to a nation, for example, should such a creative man as Edison have fallen a victim to one or more of these blights?

If, in the economic world, however, wealth is the satisfaction of a desire, subjectively, or money or its equivalent, objectively, the question of benefits in a business transaction can not be logically considered. No matter if the commodity or thing purchased be as good or better than represented, a

natural or economic law may intervene to render it valueless or worse. For instance, food may be purchased of the rarest and best quality, but if the purchaser eats too much or partakes of something he should not have eaten, he will not only derive no benefits therefrom, but, on the contrary, may become ill and suffer loss in time, money and peace of mind.

Again, if property or a commercial business is purchased and a panic ensues, the purchase may be rendered worthless. A horse may be bought, and the deal may be fair and just, but the animal may immediately suffer accident and die. It follows that the only thing that matters is whether misrepresentations have been made by one party or the other of a transaction. The purchaser may derive no benefits from a trade, and it may have been plain to an impartial observer that he could not possibly have derived any benefits, but if the thing purchased is something which he desired, there can be no economic fraud. It is evident, however, that the money received by the seller is of as much value to him as if the thing sold was of real worth to the purchaser. In short, a one-sided transaction, as in the case of the broken window, may be of great benefit. The only thing to be considered is whether a greater economic boon would have resulted had there been no destruction of property.

It is readily conceivable how the destruction of old, time-worn or unprofitable buildings by fire, cyclones or earthquakes may result in economic benefit. In cases where unsightly and unremunerative buildings are destroyed, while there may be a

nominal loss, yet if out of the ashes arise new and more attractive edifices it will be admitted that the final result is an economic boon. Such was the result in the great historic fires of the country, in Chicago and Baltimore, and in the disastrous earthquake and fire that visited San Francisco.

Paradoxical as it may seem, there is a sort of destruction that is, in reality, conservation. If, for example, a building, or a number of buildings, are destroyed by an earthquake, and if out of the ruins spring better and stronger buildings, made of concrete and steel, what happens? There is a conservation by conversion to other and indispensable uses of wood and other weak and destructible material of the original constructions, and there is a conservation of forests, which will be preserved for essential manufactures and practical uses.

In olden times, poplar, oak, hickory and even walnut timber was used for fuel and in the construction of fences and the like. If some natural catastrophe, a fire or a cyclone, destroyed large quantities of standing timber, causing a scarcity in one or more localities, it would have a tendency to check the wasteful use of such material in other localities.

Harrington Emerson, in an address on the "Opportunity of Labor Under Scientific Management," as reported in a volume entitled "Tuck School Conference on Scientific Management," says (p. 91):

"In the Seward Peninsula, Alaska, were many Eskimos. They had lived there many thousand years. They barely subsisted. There was no gain

in wealth from generation to generation; there was no gain in population, for occasionally, in severe seasons, whole settlements were wiped out by starvation. Into this country came a Swedish deserter from a whaling-ship. He found indications of gold; he staked some claims. The rush began; miners received \$10 per day. Gamblers, saloon-keepers and lewd women came in great numbers.

"There were in the elementary country four classes of society: (1) The abnormally intelligent few who had uncovered hidden wealth, gold-bearing rock; (2) the men who worked or contributed to the working of the claims; (3) an abjectly poor class at the bottom, the Eskimos; (4) a predatory class of parasites. Can it be that the poverty of the Eskimos was due to the wealth of the mine-owners?"

Further along Emerson says: "Before the days of the Norman conquests there were unusually degraded people in London. Their condition has steadily improved; never through their own efforts, but always through those of the enterprising few who went out to trade abroad, or to build up manufactures at home, or to open up new coal and iron mines."

Gerald Stanley Lee, in "Inspired Millionaires," says: "The facts seem to be coming out all about us that the world is not only inventing new kinds of machines, but, with Copernicus, Darwin, Bell, Lord Kelvin, Rousseau, Columbus, Lincoln, Wordsworth, Whitman, Emerson, Edison and Marconi, it is slowly inventing new kinds and sizes of men. There are several kinds of men with imagination

in business. Those who invent trade conveniences and economies, the creative merchants, brokers, storekeepers. Those who invent machines and whose imaginations play in the laws of physics. Those who invent new materials and whose imaginations play around the things that come out of the earth, the men who make new combinations of the elements, who are poets in chemistry or botany or mineralogy. Those who invent people.

"The special function of the inspired millionaire, as he looks over the field of invention, is inventing people. People are the most necessary of the inventions. They make and use the others. Nearly all of our great millionaires were invented by some other millionaire who saw what was in them and saw how it could be combined and released and put in action."

It would appear that the law of compensation as applied to economics is more than compensatory. People living in the twentieth century are heirs to all the discoveries, inventions and economic benefits produced by men of enterprise in the nineteenth and preceding centuries. If the second efficiency method (labor-saving devices) causes thousands to be thrown out of employment, it is only that they may be caught up by the great creative forces (efficiency method number 1) and lifted to higher and better stations.

Under "Winsome Wealth" it was shown how the artists, authors, sculptors, architects, and a host of other mental workers, find a wider and more remunerative field for their productions as economic life becomes more and more complex. So under

expanded industrialism greater opportunities are afforded to the class of men represented by managers, and various kinds of experts, chemists, inventors, mechanics, bookkeepers, clerks, engineers, foremen, chauffeurs, and so on to the end of the chapter—not forgetting the farmer.

A writer in the *Saturday Evening Post* says, relative to wealth distribution: "In the last ten years we have had the most phenomenal prosperity ever known here or anywhere else; and we have followed the example of the children of Israel and kicked, until not only have we almost convinced ourselves that we are suffering unusual hardships, but have caused the people of the Old World to wonder if at last their predictions are not coming true, that the republic is about to crumble under dissatisfaction and division." The writer states that he was told at the Census Office that our total wealth to-day is estimated at one hundred and fifty billion dollars; it was eighty-eight billion in 1900, sixty-five billion in 1890, and only sixteen billion in 1860.

"This total wealth has not been gathered into the hands of the Money Trust or tariff barons; nor has it been centered in Wall Street. It is just where wealth has always been—among the people who go to the soil, the mine and the factory, and produce wealth. The value of farms and farm property not only doubled in the last ten years, but it has increased fivefold in the last forty years, for this farm wealth was only eight billion dollars in 1870 and it is now almost as great as the total wealth of the country in 1880."

All of these considerations are corroborative of

our contention that the wealth of all classes is interwoven with the wealth of any particular class. Or, to state it in another way, creative men develop resources, discoveries and inventions; to do this they employ labor; to employ labor means to circulate money, and the more money there is in circulation, the greater the opportunity to acquire some of it.

X.

TRUSTS AND SPECIAL PRIVILEGES.

In the discussion of Trusts—which is a perennial theme—a popular practice prevails of placing them in two classes—the bad and the good, or the black and the white. To be exact, however, this statement must be modified, for there are many who would place them all in the first-named class, and these asseverate that, following the characterization of the Indian, “a good trust is a dead trust.”

Now, we maintain that these latter have the thing reversed, and what they should say is, “A good trust is a ‘live’ trust.” By a live trust is meant one which is alive—alive in spirit and action; alive to the economic needs of a people or country, and alive in visions and plans for their fulfillment. In brief, a good trust is one backed and forwarded by creative men—men who hold their positions by the force of efficiency, rather than the non-force of “dead” mass.

In the popular conception, a bad trust is a big trust or “monopoly,” one which controls the greater part of the output of the products manufactured. Such a trust may or may not be bad, depending, of course, on whether it uses its power to maintain unfair prices or to unfairly restrain trade. But, on the other hand, if it utilizes its power in developing the industrial and commercial life of a nation, by

the introduction of economies and methods of efficiency, it must be classed among the good trusts. It must be remembered, however, that a trust may become so large and unwieldy that it fails to be effective and falls of its own weight.

Essentially, the only bad trust is one which results from throwing together or combining a lot of "dead" physical units, without regard to service or efficiency, with the aim of controlling prices and restraining trade. This is the "dead" trust as distinguished from the "live" one.

As regards monopolies and special privileges, it would prove interesting if some of the decriers of these supposed evils would define the terms, and then apply the definitions to their own individual cases. Who are the monopolists? The word "monopolize" is defined as meaning "to obtain or assume exclusive possession or control of." In the light of this definition, and in view of the fact that two persons can not occupy the same space or position at the same time, are not all of us who hold positions monopolists or the beneficiaries of special privilege, if you please? So long as there are idle persons or more desirable positions than others, the less fortunate must look upon all persons holding positions, or better positions, or possessing lands or industries, monopolists. All farmers, tradesmen, professional men, and artists of various kinds, are monopolists, as are all office-holders, policemen, selectmen, mayors, sheriffs, governors, senators, and even the President. The latter not only monopolizes the office for four or more years, but, in some instances, attempts to monopolize the functions of

officials of other branches of the Government. There is a certain former President who not only monopolized the office for two terms, but dictated his successor, and then attempted to monopolize it again—and he needs watching yet.

Thus we see that there are monopolists, and, again, monopolists, and that in the last analysis all of us are monopolists—at any rate, as refers to our homes, wives and children. Perhaps this last statement should be modified. Some of us are monopolists only so far as it applies to us, and collectivists, or socialists, or anarchists, as applied to others. And is not this sense of selfishness, or envy, at the root of all, or the greater part, of this anti-trust and anti-what-not agitation?

The Mexicans, for example, seem to be the original anti-monopolists or anti-special privileged, for does it not keep them busy chasing each other out of occupations, possessions and offices? The trouble all comes about by two or more persons trying to occupy the same space or position at the same time. In physics, this is considered an impossibility—in politics, everything is possible, apparently.

In its widest sense, a monopolist is any person who "monopolizes" a "job" to the exclusion of all others, and, as all such persons are supposed to hold their positions on merit, the monopolists are the efficient. This proposition holds true only in a free country—a country in which every man is unshackled and unbound, and in which the rule of reason prevails over the fetish of force or special privilege. And, if a close observation is made of

economic conditions prevailing in the United States to-day, it will be seen that, generally speaking, it is the efficient and the men of merit who hold the responsible positions in the management of the corporations and trusts, as well as in the smaller industrial activities. The great majority of the captains of industry, the "doers," have risen from the ranks, or, at least, have proven their capacity to manage big business affairs. This must necessarily be so for a selfish reason, if no other, for the proprietors, the owners and directors of big business are forever endeavoring to declare larger dividends, and to accomplish this they must employ the most efficient men and adopt the most efficient means available.

To condense to a phrase, all monopoly may be defined as a reward for service or merit, whether it be conferred by patent rights, public utility franchises, railroad rights of way and terminals, bank or corporation charters, land grants, ferry and power franchises or by contract, public or private. And if, as some would contend, these men of ability are so numerous, why is it that so many cities are seeking the services of Colonel Goethals, the builder of the Panama Canal?

What, then, are some of the efficiency methods embodied in the so-called trusts or monopolies? That the first (the creative) of these methods is to be found in these organizations can not be questioned. All men who do things have an ideal, a general plan of the work desired to be accomplished. This plan includes the thing to be done and the ways and means of accomplishing it, and this gen-

eral plan or vision forms a no small part of the capitalization value of the enterprise. This idea was elaborated under the chapter entitled "The Entrepreneur."

The consolidation of two or more business enterprises results in the attainment of economics in the conduct of the newly formed corporation; first, by reducing the amount of capital required. This saving is embodied in efficiency method number 3 (material-saving). The consolidation also enables the management to reduce the working force—efficiency method number 2 (labor-saving). It also eliminates "waste" or "disease" in operation by removing disastrous competition (efficiency method number 12—external obstructions). This concentration of capital and machinery permits cheaper and more effective distribution and also the utilization of by-products (efficiency method number 7—material-augmenting).

This centralization further permits of experimentation along the lines of improving the product (number 14—manufacture of a better article). Neither will it be denied that this concentration of capital permits a wider promotion of the business, extension of home and foreign markets (efficiency method number 13—business augmentation).

In an interview in the *New York Sun*, Mr. Charles R. Flint, in referring to general industrial conditions in the fall of 1913, said: "Comparing the last five years with the five years preceding the industrial consolidations, we find that our exports of manufactured goods have increased nearly six times—namely, to six billion dollars—and it is a

fortunate fact for us that, of our total exports of manufactured goods, over seventy per cent. are supplied by individual consolidations. This is due not only to the fact that they can produce at a lower cost than can competing companies, but also to the fact that they have been able to organize departments for securing foreign orders, and, in some cases, as in the case of the steel company, they are carrying stocks of goods in foreign markets in order to facilitate prompt delivery."

And it is this extension of markets into foreign countries that forms the most formidable task of the entrepreneur of the twentieth century. Competition is becoming keener with the advancing years, and England, Germany, France and other European as well as South American countries, are strenuously contending for expanding markets for their products. Instead of hindering this great work, which confers benefits upon all citizens by reason of the balance of trade, the Government should exercise all its powers to encourage our captains of industry in opening up new commercial fields.

The entrepreneurs, in building up foreign trade, do not confine themselves to subjective methods of promotion altogether. In numerous instances they have created demands for manufactured goods or other products among the citizens of other countries, where no such demand existed. This was true of the Standard Oil Company when it first attempted to find a market for kerosene and by-products in China and other countries. Then, in other instances, our capitalists sometimes promote enterprises, railroads, trolley lines, etc., in foreign

lands, and in this way provide a market for our products.

Some may contend that this last method represents an unsound economic principle; that all of our surplus money should be invested at home. But is it not a fact that anything which increases the wealth of undeveloped foreign countries tends to promote commerce? Indirectly, this foreign investment benefits us, because it increases production, and the laborers employed in this production increase the sum total of the consumers of the world. Again, money used in educating and raising the standard of living of semi-civilized people ultimately creates wealth in various forms, as represented in demands for products of civilization. How long, for example, would it take a manufacturer to get rich selling works of art, treatises on higher mathematics or spectroscopes to the inhabitants of Timbuctoo, unless some effort be made to educate them?

As an example of what education can do subjectively to a people, we quote the following from "A Handbook of Modern Japan," showing the national development in thirty years, ending in 1901:

"In 1872 the population was 33,210,000; in 1902, about 45,000,000, showing an increase slightly in excess of thirty-three and one-third per cent. The trade during that period increased from \$43,204,462 to \$508,166,187, an increase of over one thousand per cent.

"Foreign trade exports increased from \$17,026,647 to \$252,349,542, a remarkable increase of fifteen hundred per cent. Imports increased from

\$26,174,814 to \$255,816,644, nearly one thousand per cent. Yet there are those who say that education and brains are non-productive!"

What can be done to curb these so-called trusts or to minimize the evils incident to their organization and conduct? Much has been attempted along this line by various methods, publicity, regulatory and penal, but none of these methods have proven altogether successful, from an economic viewpoint. All attempts to regulate or dissolve trusts will prove more or less abortive for at least two reasons. First, for the reason that the industrial and commercial life of the nation and the world has become so big and complex that no commission can determine what should or should not be done under all circumstances. The railroads, as an example, are to-day on a stand, if, indeed, they be not retrograding, because of restrictive legislation and regulative measures. Who are the omniscient ones that can tell these railroad promoters what to do under all conditions? Where is the man who can dictate to a Harriman or a Hill, and tell him where to establish his lines or to make his extensions? Then, if the railroads are to be restricted in their profits to a certain per cent. of earnings on their capitalization, who will build the new lines or make the necessary extensions and improvements?

The second reason why trust legislation will prove more or less futile is that no law or book of laws can prevent captains of industry from secretly agreeing among themselves, in the event that their corporations are dissolved by decrees of court, to continue the operations as before, even

though, to all outward appearance, the trusts have been resolved into their constituent companies.

When all has been said, perhaps it will be discovered that the Supreme Court struck the keynote in the solution of the trust problem when it wrote the word "reasonable" into the Sherman act. Reason must be exercised on both sides—by the public as well as the corporations—if free industrialism is to endure. If the trusts are not reasonable, they will bring down on their heads the vindictive wrath of an outraged public, and if the public is not reasonable, they will, by their activities, paralyze the industrial animal which feeds us—sometimes with golden eggs.

The answer to the trust problem, therefore, would seem to lie in the two words—publicity and reason. If all the essential facts are known, and if the rule of reason is permitted to prevail, the great economic and social laws of supply and demand, of action and reaction, of reward and punishment, will adjust themselves to the eye and ear of justice, for, with Cicero, we must believe that "*Natura juris fons.*"

XI.

PHYSICAL VALUATION AND WATERED STOCK.

If, as we have endeavored to prove, land, labor and capital do not produce all the wealth of a nation, a number of towering structures, founded upon the accepted theory of economics, must totter and fall. Among these are propagandas based upon physical valuation, and watered-stock theories and all forms of socialism, syndicalism and singletaxism. These latter doctrines will be treated under separate chapters.

What would be the effect of the enforcement of physical valuation of corporate property as a basis for dividends? It will readily be agreed that, after a careful perusal of the principles enunciated herein, the immediate effect would be both disastrous and unjust. It was shown in the chapter on "The Entrepreneur" that the value of a projected enterprise does not lie in the amount expended in labor and material in its construction. What was the physical valuation of the "streak of rust and right of way" of the Union Pacific when Harriman assumed control, or the right of way (without the "rust") of the Great Northern when James J. Hill financed it? And what is represented in the difference in value of those roads at the times specified, and now? And who is hurt by the transactions? It was explained in that chapter how these men created wealth in all

of the fifteen efficiency methods, and that, in accomplishing this, they not only harmed no one, but, on the contrary, helped thousands—farmers, tradesmen, stockholders—in short, all who came within the magic circle of their economic activities.

When the full portent of the value of mind, or the idea as a source of wealth, is recognized, the advocacy of physical valuation, as a means to restrict profits, will be considered a crime. If the greater part of the so-called "water" in a stock is really ideaistic wealth, an effort to "squeeze" out the water would, in all probability, result in the strangulation of the industry. If the water is, in reality, brains, or brain products, it is clear the elimination of the water would be equivalent to eliminating creative energy, with a resultant decline and decay of the enterprise.

It would be putting a premium on inefficiency if railroads were compelled to limit their earnings to a sum equal to a stipulated per cent. on the physical valuation of the road. What does it matter whether the extra profits arising from creative energy are divided among the shareholders as dividends or applied to the capital stock? What does it concern any one, in other words, whether a given corporation declares dividends of thirty per cent. on a capitalization at its physical value, or dividends of ten per cent. on treble its valuation? In regard to public service corporations, however, an attempt should be made to determine whether the rates are reasonable and just.

Turning to industrial life, what is the physical valuation of Marshall Field & Co., and what is the

relative proportion between the sum invested and the annual earnings? What is the physical valuation of the E. C. Simmons Hardware Company, of St. Louis, which does a yearly business of \$20,000,000? Or what is the physical valuation of the Sears-Roebuck Company, the Ford Motor Company or the John Wanamaker Company? All of these companies, and thousands of others, have, of course, large amounts invested, but it is common knowledge that the dividends declared are enormously large.

How can the rewards of efficiency be limited? In New Rochelle, N. Y., there resides an aged man who is engaged in the manufacture of scales and balances. Some of these are used in analytical and assay work, and are so delicately adjusted that a sensitiveness of 1-400th of a milligram is obtained. A milligram is one-thousandth part of a grain, which would mean that the balances detect substances differing in weight to 1-400,000th part of a grain. That is, they will weigh a lead-pencil mark. We do not know what the physical valuation of his plant, which occupies one small building, is, but we know that his profits are great.

The physical valuation of the Edison Electric Company or the Westinghouse Company is great, but what is the physical valuation of the mind of an Edison or a Westinghouse, the original sources of all this wealth?

Of course it is recognized that the physical valuation theory is applied particularly to public utilities or quasi-public utilities, but do not the elements of creative wealth enter into these as largely as into an ordinary industrial enterprise? It can not be

denied that abuses have accompanied the conduct of many of these utilities, and there is no question that there should be a certain amount of governmental regulation. But how far should a city, state or nation go in this direction? Should they insist upon a strict physical valuation and limit the profits to a certain per cent.? We believe that these methods are both unwise and unjust. They might be adapted to particular situations to a certain degree. In the conduct of a public utility—for example, a street railway—a number of issues must be considered. The public corporation has no right to declare dividends under a policy of total disregard for public convenience and comfort. The public has a right to demand adequate and satisfactory service, and if it is found, upon investigation, that the management of the public service corporation has put dividend-paying above service, a halt should be called by those in authority.

It can not be gainsaid that the conduct of a public utility corporation requires a high quality of mind. The men behind these corporations must possess all the qualities of the successful entrepreneur and must utilize all of the industrial efficiency methods available. We have in mind one such person, a president of a heat, light and traction company, who, by close and intelligent application, built up a discredited and losing plant to a magnificent and prosperous corporation. But in so doing he wrecked his health. By working about eighteen hours a day, he reduced the cost of utilities and made the stock pay big dividends; increased the value, if not the physical valuation of the plant, at

the expense of his own physical value. And, after all has been said, any sort of a big enterprise will not run of its own accord. It needs some strong, resourceful man at its head, who will sacrifice all interests to the consummation of the work in hand.

There is another very important phase of all propagandas looking to the governmental control or ownership of public utilities. We refer to the risks assumed. These risks include the great destructive forces of nature—fire, storms, floods, tornadoes, earthquakes—and also risks growing out of competition, labor disputes and other human elements, including war.* If everything is to be put on a physical basis, who is to pay for all of these losses? It must be plain to all that big allowances must be made for all these destructive elements.

And instances of this sort of elemental destruction are occurring almost daily. As we write, the

*Since writing this chapter, one of the greatest wars of all times has broken out in Europe. It is not our purpose to dwell on the manifold horrors of this conflict, but simply to call attention to the stupendous and widespread economic effect, and how all the lesser efficiency methods shrink when compared with this violation of the fifteenth efficiency method, the melioration of economic environments. Values heretofore considered unassailable have been riddled by "imaginary" and "psychological" bullets, counterfeits of the realities fired on the battlefield. But these economic bullets are no less real because of their invisibleness or immateriality.

Then, it must be remembered that back of all is the moral equation (character), the lack of which among the nations of the world has brought on this awful cataclysm. And how senseless is it all—even from an economic point of view. If it be the part of a wise government to encourage trade with other nations, it would appear a futile task to acquire their goodwill by the use of shell and shrapnel. If the war is for territorial aggrandizement, the nations which win will lose, for what will it profit them if they acquire a few square miles of territory, if thereby they lose the trade of the nations with whom they were at war, as well as other more or less sympathetic nations?

report comes that floods have destroyed hundreds of thousands of dollars' worth of property in Texas. It is not necessary to call attention to such great calamities as the Galveston flood, the San Francisco earthquake and the devastating floods in Ohio and the Central West in the early part of 1913.

The Minnesota courts recently decided that a State can tax a railroad down to a certain profit. It follows that the more the management of the road can reduce expenses by efficiency methods the more the State can tax it. This affords a splendid inducement for efficiency! If the management of a public service corporation, by clever advertising and methods of promotion, attracts double the amount of traffic as his competitor, should he be deprived of the results of his efforts and ingenuity?

Watered stock stands in the same relation to big business as goodwill does to small enterprises. Under the "Entrepreneur" chapter it was shown that goodwill is a compound of several factors, in which the creative element of mind predominated. Why should a money value be placed on goodwill and withheld from watered stock? As the Japanese schoolboy would say, "We ask to know." The law that water seeks its level applies to economics as well as to hydraulics, and it follows that if there is too much water in a stock, the price "level" will fluctuate accordingly.

XII.

SOCIALISM.

One of the strange, if not unaccounted-for, phenomena of the times is the rapid growth of the principles of socialism throughout the world. That this should be, despite the signal failure of all attempts to establish socialist colonies and states, is all the more remarkable. The press, newspapers, magazines and books are freely discussing the propaganda in all of its phases, and in consequence the miasmatic doctrine is threatening to submerge the world.

Until recently, the socialists have been wont to point to New Zealand as a shining example, successful and triumphant, of co-operative methods, but of late disastrous reports have been received from that socialistic colony, and a hesitancy to "point with pride" to this country has been observed.

There was published in *Life*, in its issue of Nov. 13, 1913, a letter from Mr. E. A. Gowran, who said in part: "It was our misfortune to visit New Zealand last winter, and we had an opportunity to learn something of the actual results of the 'advanced' and 'progressive' (?) methods of government so widely advocated these days by lead-pencil theorists, and we wish that those so anxious for all these socialistic theories might be obliged to go to New Zealand to live.

"The net results in New Zealand, as we saw them, were to place a complete embargo on all progress and rob the individual of all incentive to put forth his best efforts. True, it has placed all on a level; but that level is of such a low order that the result is disastrous to the progress and well-being of the country as a whole, and the condition of the people is such as prevailed elsewhere fifty years ago. In other words, New Zealand seems to be 'progressing' backwards.

"We have visited, as tourists, nearly every country in the world, and we were never among a people supposed to be civilized where living conditions were so crude, out of date and uncomfortable generally for the tourist as we found them in New Zealand; and the people in general were the most crude, mediocre and backwoods lot. . . . As regards labor conditions, after twenty years of government by the Labor party, and 'labor laws,' there seems to us to be more strikes and labor troubles generally than we know anything about here.

"In New Zealand, as soon as a business becomes profitable and successful, the government claims it and takes it over, and thereafter the same business is conducted by the government directly, or is split up and sold to small holders with little or no capital—the government furnishing the capital on long time and very low interest. The prosperous, successful man is treated as an enemy to society in general, and the sick, lame and lazy are petted and nursed to the point where the successful man finds himself better off if he drops back in the line of march. Consequently, 'there is nothing doing.'"

Socialism is not only contrary to all experience, but to all sound tenets of philosophy and psychology as well. Since the Marxian doctrine that land, labor and capital produce all wealth has been proven false, socialism hasn't a leg to stand on. Self-reliance, freedom to aspire, to prosecute one's ideas and ideals, distinguishes man from the brute. To destroy these qualities would be to convert him into a jellyfish, or, at best, half-animal and half-man. Under a system of government guaranteeing every one the satisfaction of his desires and needs, man's greatest friend, adversity, would be taken away from him. There is something higher and better than material prosperity. It would be a sad day when, by governmental interposition, all that makes for true success and nobility is destroyed in an effort to satisfy man's material wants.

Secretary of the Treasury McAdoo, the man who built the Hudson River tunnel, has this to say anent the elements contributing to success in life:

"I was brought up in Georgia in the path of General Sherman's famous march to the sea. As Henry Grady once remarked, 'General Sherman was a bit careless with fire,' and for this reason, among others, he has never been a popular man in Georgia. For myself, however, I feel that I owe General Sherman a debt of gratitude. He produced conditions and an environment which made it necessary for the individual to develop every resource and every power with which nature had endowed him in order to exist. I believe that character is formed and developed in the highest degree by hardships, suffering and poverty. I never doubted that what-

ever of character and capacity I have developed has been, in a large measure, due to the surroundings and conditions which General Sherman forced upon the people of my section during the war."

This extract is from an article on Secretary McAdoo in *Current Opinion* of April, 1913. A little further along it says: "The man that first discovered fire brought even the anger of the gods down upon him. The man that discovered that the world was really round was thrown into prison, and the man that discovered that the earth revolved around the sun had to recant or be excommunicated."

The declarations of Mr. McAdoo are refreshing, coming at a time when the world is areek with namby-pamby doctrines, socialistic, semi-socialistic and anarchistic, all of which are advocated by those who would make life easy for the average man.

Socialism and socialists are like the Irishman's flea—when you corner them at one point, they appear suddenly at another and most unexpected place. John Spargo's last book, "The Substance of Socialism," might be termed the "Last Stand of Socialism," were it not that he still clings tenaciously to the wornout doctrines of "surplus value" and "exploitation of labor." When socialists defend themselves behind the bulwark of individualism, as he does in the treatise named, the fabric of their hoary tenets is becoming, in truth, rent and torn. He says (p. 82):

"Collective ownership is not the ultimate, fundamental condition of socialism. It is proposed only as a means to an end, not as an end itself. The

central idea of socialism, its spirit, is the doctrine of the division of society into antagonistic classes. The producers of wealth are exploited by a class of capitalists draining from them the 'surplus value,' and instinctively they struggle against the exploitation, to reduce the amount of the surplus value taken by capitalists to a minimum—ultimately to zero. To do away with exploitation, to destroy the power of one class to live upon the labors of another class, is the socialist aim. Social ownership and control are only proposed as a means to the attainment of that end. If other means toward that end—quicker, more efficient or more certain means—can be found, there is nothing in socialism to prevent their adoption.

"It follows, therefore, that to make collective property of things not used to exploit labor does not, necessarily, form part of the socialist program. It is easy to see that, according to this principle of differentiation, it would be necessary to socialize the railroads, but not at all necessary to socialize the wheelbarrow." Neither would the small farmer be disturbed by him.

It will be seen that this "last stand" is no stand at all, for the "surplus value" alleged to be derived from labor has been shown to be "brain value," and "exploitation" is, in the sense of the author of the book under review, a mental chimera.

Again, Spargo says that "equality of opportunity" is the demand of the socialist. Just what he means by equality of opportunity would be hard to explain, but if opportunity to labor, to earn an honest living, is the desideratum, then, as we have

shown in this work, individualism, with certain amendments, is the answer.

If socialists, who may have discarded the Marxian theory of wealth, still believe that wealth produced by certain kinds of brain workers should be appropriated by the state, the question may be asked, If one kind, why not all kinds of ideaistic wealth? If there is to be a division into groups of the various kinds of mental workers, with the entrepreneurs and other "black sheep" on the one side, and the white sheep on the other, what shall be the basis of this division? Shall the author, inventor, actor and artist be placed in the latter class, or shall the inventor be included in the group of wealth producers who shall be compelled to divide their earnings? Is not one man's mind as much his own as another's?

What would the hierarchy of socialism say to the man who claimed he could send messages without wires thousands of miles, or could transmit messages, written or vocal, across a continent? Or what kind of a term or epithet would have been applied to Campbell when he announced the possibility of inventing a machine to pick cotton?

Campbell's story of his trials and disappointments and final success, after twenty years of experimentation, to perfect the machine, reads like a romance. It was necessary to adjust the parts in such a manner that the fingers of the machine would collect the ripe cotton without injuring the bolls. This was accomplished by means of complicated machinery, by which the peculiarly jointed fingers would, in their delicate adjustment of stroke and movement, perform the work.

Almost simultaneously with the announcement of this remarkable invention came the news from the South that an owner of a cotton plantation, by means of intensive farming, had quadrupled the average yield per acre. Who can calculate the benefits derivable from these two discoveries when put into general use? One result will be the cheapening of the cost of one of the most universally used of farm products.

Recognizing the truth of the adage that a penny, or a million, saved is equal to a like amount earned, will the Marxite or old-school economist say which of the trilogy of land, labor and capital saves or earns all of these millions in cotton?

Now, under the socialistic or paternal form of government, what would have happened? Would Campbell have been permitted to work twenty years on the cotton-picking invention? Out of the many millions, would he have been the one selected for this purpose, even if, under the guidance of those in power, such an invention would have been deemed feasible? What a fine method this would afford to dodge work!

When the true laws of political economy are discovered, so great a thinker as G. Bernard Shaw will not fall into the bald error of saying: "Social democracy would not be long saddled with the rents of ability which have, during the past century, made our born captains of industry our masters and tyrants, instead of our servants and leaders. It is conceivable that rent of managerial ability might in course of time become negative, astonishing as that may seem to many persons who are by this

time so hopelessly confused amid existing anomalies that the proposition that 'whosoever of you will be the chiefest shall be the servant of all,' strikes them as rather an Utopian paradox than as the most obvious and inevitable of social arrangements." —"*Fabian Essays in Socialism*," p. 198.

Surely, the idea of creative wealth is either absolutely unconceived or "hopelessly confused amid existing anomalies." Think of it! The captains of industry, who create opportunities to labor for millions, who lessen the cost of living and transform the world into a wonderland, are accused of having their ability so to do "saddled" upon the people. Shaw should take another shy at the Shylocks and try to get the horse in correct juxtaposition with the proverbial cart.

To negative the ability of the captains of industry would mean the destruction of initiative, the root of all progress. Again, to negative the ability of these captains would not be desirable, even if it were feasible. Nobody knows it all, and there is none so wise that some one else may not become wiser. Managerial ability and other forces of idealistic wealth must always be in demand, not only that the resources of a country may be fully developed and the highest economic returns be obtained, but—and this is more important—that a successful competition with other nations may obtain.

It would not be desirable to curb or "negative" the ability of the entrepreneur or creative man for another reason. It is due to every man that he be permitted to develop his talent to the highest. It matters little what the economic effect may be; it

matters much whether he be allowed to develop his powers in order to become a full-grown man.

But there are ways in which a government can aid the people in their economic struggles, even though governmental control is not expedient. Many advocate the municipal, state or national ownership of public utilities, but, in addition to the objectionable features cited above, there are other reasons why this doctrine should not prevail. First, there is the delay on agreeing on the proper thing to do, and, second, there is the temptation to select employees by political preferment or personal friendliness rather than on strict merit.

Economic progress would be hampered at every turn. Where there is so much to be done, and in view of the fact that so much of what is accomplished under individualism seems impracticable at first blush, it is evident that if things were left to a vote of a bureau, committee or other central authority, much that should have been done would be left undone.

An excellent example of this may be readily recalled; namely, the delay of years in the development of coal and other mineral and agricultural lands in Alaska. There has been such a divergency of views as to the best methods of development between those in high and low authority, between the mass of people and the newspapers, that the coal has been left in the ground, while the industries of the Pacific Coast languished, and were forced to pay an exorbitant price for the fundamental base of all progress—the black diamond.

What are some of the legitimate ways in which

a government can aid its clients, alias the people? It may be truthfully remarked that the various state and local governments builded better than they knew when they laid the foundations for economic development in establishing public schools. When the public school systems were first established, it was with the object of safeguarding and preserving the republic, without special reference to individual benefits or general industrial enhancement. It was purposed to educate the children in the first principles in order that they might, upon the attainment of their majority, exercise the electoral franchise more intelligently. Since that time there has been an undeviating trend toward the enlargement of the curriculum, until, in late years, industrial and vocational training has been introduced, and each succeeding year has seen the expansion to more individualistic courses of study.

Likewise, the National Government, through its various departments, is gradually adopting a more fraternal system of administration in educative matters. The Department of Agriculture, as an illustration, is, in a thousand ways, teaching farmers how to till the soil and rear stock in a more efficient and productive manner.

The National Congress and various State legislatures have also placed many laws on the statute-books looking to the melioration of the condition of the working classes, but the highest good from this source can not be expected until a correct economic basis has been adopted.

There is a limit, however, to this governmental supervision, and it is far from socialism. The func-

tion of the Government is not to direct citizens in their economic struggles; neither is it safe nor sane to guarantee a livelihood to all, regardless of circumstances and conditions. Anything which weakens the initiative, destroys the will or personality, undermines the character of an individual, or makes him less a man, is baneful and pernicious.

The socialists and other agitators who claim opportunities for labor are becoming less with the advancing years do not seem to realize that opportunities expand in proportion to the increase in population and the general educational and economic progress. What a farce to cry, "The door of opportunity is closed!" when heaven and earth stand ready to shower riches, material and immaterial, upon those who qualify themselves to receive. Did any of the great men and women sit down and bewail the lack of opportunity? Did Franklin, or Washington, or Lincoln, or Watts, or Florence Nightingale, or Jenny Lind, or Jane Addams, or any of the captains of industry, or the inventors, or the professional men, who, through self-control and self-culture, raised himself above his fellow-man?

Did Helen Keller bemoan the lack of opportunity when she found herself in a world of darkness and silence? The answer is the world of light, of beauty, of speech and song which she created, which she has called to her side from the invisible universe of unexplored wealth.

Now, all together! Do you not hear the anvil chorus? "But Helen Keller is a socialist—what have you got to say to that?"

Well, if you had started with the handicaps of

Miss Keller, you would be entitled to be a socialist or anything else consistent with high purpose and endeavor. We ought to recognize the fact that there are two aspects of socialism—one emanating from the heart, and the other from the head. It is to be hoped that we are all "heart" socialists, that we possess the elements of pity and have a burning desire to help others in all ways compatible with experience and reason. But we may honestly differ as to methods. Some of us believe that the strongest characters are formed in a struggle against the tide, while others would lend a helping hand under all circumstances.

Coddle the cuddling child, but there comes a time when the crooning cradle-song must give way to the martial Marsellaise. The story of Helen Keller's achievement of the impossible should restore in our hearts the renascent twins of infinite hope and infinite courage.

The arguments against socialism apply equally as strong against the doctrinal blights of syndicalism and the Industrial Workers of the World. If land, labor and capital are not the only productive forces, the fangs of their sinuous and insidious shibboleth are removed. These scourges of progress blatantly announce that labor, as far as the human element is concerned, produces all wealth and is, therefore, entitled to all profits. The text-books on economics, with John Stuart Mill as their god and guide, have no adequate answer to this cry, which is the basis of all socialistic creeds and screeds.

XIII.

SINGLE TAX.

Among the numerous "isms" which are coming to the surface with renewed life in the general swirl and ebullition of economic agitation is that of Single Tax. The doctrine of the single tax was first promulgated by the Physiocrats and later rejuvenated by Henry George in "Progress and Poverty." The latter advocated the abolition of all taxes upon industry and products of industry and the taking by taxation upon land values of the annual rental value which is now rendered to private ownership.

Mr. George advanced a number of arguments in favor of his theory, but the single-taxers of the present day confine themselves principally to the proposition that economic rent is created by the community, and that it can not, therefore, be appropriated by the owner. This is the doctrine of the "unearned increment," and recent agitation has urged the gradual appropriation by the state, either of all the future unearned increment of land, or of a larger share of this future unearned increment than is taken at the present time in taxes. It is also contended that the placing on land of all the tax will force the development of vacant and unused property.

What is the "unearned increment," so-called? How is it created? As a general proposition it may

be said that it has its origin in the same manner as all dynamic wealth—it is created by men of enterprise. The fact is that the unearned increment must be considered as the product of economic forces, the greatest of which is intellect, just as the material progress of the world is the product of such forces. If we are to appropriate the rental on land thus increased in value, why not appropriate all of the industrial opportunities created by ideaistic and dynamic wealth-producing forces? For example, the industrial life of to-day creates positions for all sorts of experts and brain-workers. It would be just as reasonable to require these experts and mental workers who are thus benefited by economic environments to divide their salaries with the public as it is to ask the beneficiaries of the unearned increment to divide with the improvident.

Man—be he beggar, proletariat, aristocrat, plutocrat, or what not—is a debtor to society in numberless ways and is the beneficiary of all the creative and dynamic wealth which has transformed the world into the marvelous state of advancement of to-day. These benefits are showered upon him from the time of his birth until that solemn day in which he closes his eyes on all earthly things. The sciences of chemistry, medicine, bacteriology and the philanthropies have taught the mother how to ward off many of the most destructive of infantile ills, and it is not altogether improbable that the reader owes his life to one or more of these discoveries, which have also saved the lives and meliorated the condition of numberless adults.

Society then takes the child and teaches it the

elements of useful knowledge by means of kindergartens and public schools, and the education thus acquired not only enables the child to better fight life's battles, but also to absorb a completer and fuller enjoyment of the world's good. The schools are supplemented by the public libraries and other educative forces, and after the child has reached maturity his life is made smoother and pleasanter by the presence of numerous applied arts and sciences. He can travel from place to place by water, rail or airship—to be strictly up to date. He can purchase the news of the day and magazines for a nominal sum. The nickelodeon or moving pictures have supplemented the theaters, and, in most large cities, free concerts are held in the parks and public places. The introduction of the sciences and inventions in manufactures has cheapened products and brought them within the reach of all who are willing to work for them.

"Unearned increment," indeed! Who are the recipients of the unbought but real wealth of the world? To name them is to name all who live in this marvelous twentieth century. The passenger who pays his way, and the hobo who begs or steals a ride on a transcontinental train, the former to enjoy the scenic wonders, the latter to seek employment, are alike obtaining the benefits of the unearned increment. Some go to Europe and the lands of the East, while others have these places brought to them in pictorial panoramas.

The man of millions and the man working in the ditch are receiving the unearned increment when they purchase a paper, a periodical or a book

for a sum which hardly pays for the paper used in their manufacture. The wage-earner, the farmer and all manual laborers are enriched by and benefited by labor-saving devices, which relieve them of the drudgery of the hardest forms of labor, permits the reduction of working-hours, and, in case of the farmer, increases the profits of soil culture. Professional men and mental laborers of all kinds are beneficiaries of the unearned increment by the opening of new fields of labor attendant with the exercise of man's ingenuity and creativeness.

The emancipation of woman has come through the marvelous inventions. The old saw, "Man works from sun to sun, but woman's work is never done," is no longer true. Household necessities are now purchased by the housewife at prices that would astonish their grandmothers. The sewing-machine partly emancipated their mothers, but now ready-made clothing can be had so reasonable that the sewing-machine has, in a great measure, been thrown into the discard. And now comes the "fireless cooker," which allows the household goddess to prepare three meals at once.

The rule of the unearned increment, if there be such, applies principally to the small property-holders—those who have purchased small tracts of land near a growing city and held it for an increase. The men of capital, real-estate dealers, and others who purchase such land in large quantities, are, as a rule, engaged in enterprises which form a big factor in the enhancement of their own as well as surrounding property. He holds a position analogous to that of the railroad builder and the manu-

facturer, who, by developing new fields of labor, benefit the many. Then, the taxes on the land, advertising and other expenses incident to its increase by the process of the "unearned increment," in most cases, go a long way towards counterbalancing any gain. There is, for that reason, a big element of risk.

As to the argument that the application of the theory of the single tax would compel owners to improve their property, it may be said that the opposite effect has been experienced at places where it has been tried, which, upon consideration, will be seen to be the logical result. In Vancouver, B. C., it has been found that the large property-owners and capitalists take advantage of the exemption of taxes on improvements, and, instead of developing several pieces of property, are in the habit of erecting skyscrapers on single pieces. It should be apparent to all that it is impossible and inexpedient to "force" development, for all sane and safe progress comes by slow processes, which must take into account a thousand factors in economic life.

To sum up in a sentence, the same criticism applies to the teachings of single taxism as to all other restrictive social doctrines; it tends to destroy the initiative and the creative force in man, and is therefore hurtful to all true progress. And, as with the other socialistic dogmas considered, it appears to be a deliberate attempt to appropriate the earnings of enterprise without assuming any of its risks.

XIV.

CONSERVATION.

It is not within the province of a work of this kind to treat exhaustively the Conservation of Natural Resources. The proposition that such resources—timber and mineral lands, waters for irrigation, navigation and power, fish and game and great scenic sections—should be conserved, needs no argument. The reclamation of waste land, whether by methods of irrigation, drainage or reforestation, or prevention of soil erosion, comprises a stupendous constructive work for the national and state governments. The undue waste of national wealth should be prevented, without question, but the constructive phase of conservation has been in a hopeless tangle for many years. It is all right to outline a policy for the prevention of waste, but, keeping step with this movement, there should be an intelligent plan formulated by those in authority to encourage a rational development of resources.

All are familiar with the bitter controversies that have been raging for years between conservationists and anti-conservationists; between advocates of sane measures of development and those of another variety, and between the national and state partisans. The general result of all this agitation, as it appears to date, is nil, or practically such. It is our intention to point out one or two fundamental

propositions which may help to solve these problems.

If our contention that all industrial development is due to creative forces, or men of initiative and enterprise, it follows that the tools of industrialism should be made as accessible and free as possible. Some of these tools are to be found in the natural products—coal, iron, oil, gas, and water-courses. Shall these fundamental implements be taxed, or shall they be made as free as other needful and invigorating forces of nature—air, sunshine and rain? How sordid and unimaginative is the mind that can not see in coal the bustling factories, the thriving cities, and the great arteries of commerce—rivers, rail and lakes—black with carriers ladened with wealth.

Many citizens of the United States have recently become obsessed with an impulse to conserve all kinds of national resources, apparently without a thought of the natural consequences. They have advocated the public ownership or control of mineral and coal lands, without regard to the lessons of experience, of the attendant cost of prospecting, mining and distributing. Coal, particularly in Alaska, whose benign climate eliminates all necessity for fuel, has been the subject of bitter and interminable war. The many who have gone mad on the conservation of coal, or governmental leasing of coal lands, do not seem to realize that this mineral is the prime element entering into all manufactures, arts and industrial pursuits. It is like telling the farmer to till the soil without tools, or the teacher to instruct his pupils without first acquiring the rudiments of knowledge.

These politicians and agitators have frantically declaimed against turning over coal land to the only class of people able to develop it, in order that the Government may collect a few cents royalty per ton. When it is considered that the consumption of a small quantity of coal may give employment to many otherwise idle persons, or that it may be the means of making some discovery in the sciences or arts which may prove of inestimable value, the short-sighted policy of this variety of conservationists is apparent.

Estimating the population of the Greater United States at 100,000,000, and allowing the Government ten cents per ton royalty on coal mined on federal property, for every 100,000,000 tons of coal mined, each individual's share would be ten cents. When it is realized that the reduction in taxes would be the greatest to those who pay the largest amount of taxes, the savings to the average man would be much less than the sum named.

Again, if a royalty is charged on Government coal, the lessee will simply add an equivalent amount to the sale price, which is tantamount to taxing industries. If the Government is justified in placing a protective tariff on goods for the benefit of labor and manufactures, it is more than justified in permitting the free use of coal for the same purpose.

The American people are not logical at all times. They have recognized the benefits of a tariff for manufactured articles and a low tariff or free trade for raw materials, but in the case of the rawest of raw materials, that of coal, it is proposed to tax it while still in the depths of the earth. They pro-

pose to lease the coal lands in such small tracts as to prohibit their development in a satisfactory or economical manner.

The same strictures apply to the never-ending, merry-go-round discussion over water-power grants. If these prime factors in economic life must be taxed, in the name of all that is reasonable, tax them at once, in order that the wheels of progress may again begin to move. Of course, there is only one thing worse than taxing the tools of industry, and that is the taking of them, or the keeping of them from the workers of the world.

Would not a rational solution of the conservation problem, as regards development, be for the Government, national or state, to employ engineers of wide experience and vision to make surveys of the natural resources and recommend such action as they deem wise? In other words, place the difficult problems in the hands of experts, thus removing them from all forms of agitation and political demagogism.

There may, and no doubt will, come a time in the not distant future when other means and methods will be devised for creating power. With the perfection of the electrical transmission of energy, power can be generated at central points and conducted to factories hundreds of miles away. Then, also, the sea and the sun will be made to give forth their hidden energies, and even now the story comes from Philadelphia of the successful invention of a sun motor. It is those who have no imagination, or faith in the genius of man, who are loudest in their cries for conservation of anything and everything

in heaven and earth. While the stolid conservationist is lying awake nights worrying about what the world will do for this and that a thousand years hence, a Marconi, with his head in the clouds, finds a way to eliminate material altogether.

Former Secretary of the Interior Walter L. Fisher, in an address delivered at a meeting of the National Fire Protective Association in May, 1911, on "Fire Waste and Remedy," said, among other things: "The National Government is trying to reduce loss by requiring fireproof material in the construction of its buildings. Government statistics show that the annual fire loss is one-half the value of the new buildings erected each year. A tax amounting to \$2.51 on every man, woman and child in the United States is being paid in the annual fire loss of the nation upon its buildings and their contents alone.

"The United States Government is the owner of buildings costing more than \$300,000,000, and is spending each year more than \$20,000,000 in new buildings. It is the policy of the Government not to insure its buildings against loss by fire, but to reduce its risks by fire. It is also its policy to minimize the possibility of forest fires by effective regulations."

Despite the incongruity existing between the first and second paragraphs, his remarks contain much food for thought. His inconsistency lies in advocating the erection of fire-proof buildings to save insurance, while at the same time citing the policy of the Government in conserving and preserving forests. Lumber, the most inflammable of all mate-

rials used in construction, is derived from these forests. We do not seem to realize that the age of wood is passing, and that the age of concrete and steel is fast replacing it. Fire-proof buildings are, as is well known, being erected by corporations and individuals, and, in many instances, the fire-proofing applies to the furniture and equipment.

But there is conservation and conservation. The ideal conservationist is he who conserves the land and is willing to sacrifice appetites and desires to that end. For instance, if, instead of gratifying his desire for alcoholic drink or tobacco, he would only consume the products of the soil that are essential to sustenance, this would constitute true conservation. We complain of the "high cost of living," and at the same time demand that the best soil in the country be devoted to the raising of products which are a detriment, or, at least, useless to mankind. The true conservationist could also conserve the land by eating less! Reputable physicians state that the average individual eats from two to three times as much as is really necessary or is good for him.

Economists have recently discovered that one of the principal causes of the high cost of living is the increased use of grain and corn in the manufacture of liquor. It is estimated that more grain is used at the present time in the manufacture of alcoholic products than the aggregate of such products twenty years ago. Does it not appear that something is wrong in the industrial world when such a state of things exists? What a travesty to decry the steadily advancing prices of necessities,

beef, cereals and other agricultural products, when our farms are devoted to raising crops to be converted into poisons rather than food or clothing.

In the days of the millennium man will live simply and long. If, as the physicians claim, over one-half of our food could be dispensed with, it follows that a greater part of our time could be devoted to intellectual pursuits and pleasures, and in this way conserve our health and well-being. But it seems to be a perversity of human nature to want to conserve something hundreds of miles away, and which can not in any manner affect him or his mode of living.

XV.

THE INDUSTRIAL MAGNA CHARTA.

Seven hundred years ago, in "Merrie England," there was being enacted the last of a long series of persecutions and tyrannies under King John which culminated in the signing of the Great Charter. This Magna Charta was prepared and submitted to the king by the barons, or property-holders, whose rights had been invaded, but by the terms of the document the rights of all classes were guaranteed and conserved. This charter was the first great social legislative act of the English nation and it constitutes the legal foundation of Anglo-Saxon liberties.

The essential clauses of this Magna Charta are those which protect the personal liberty and property of all free men by offering security from arbitrary imprisonment and arbitrary spoliation. This remarkable document was called forth by the tyrannies and the levying of unjust tributes by an unscrupulous king. Shall the tyrannies of an over-scrupulous or mistaken Government be the cause for the declaration of a new charter based upon fundamental property rights?

Socialistic doctrines, insidious and destructive, are slowly and stealthily permeating the nations of the world, threatening to immerse Industrialism in their noxious fumes. Shall this be permitted to go

on until all are strangled by the deadly gas, or shall a new charter be proclaimed, founded upon sane individualism? But perhaps all of this despotic and confiscatory propaganda is a necessary part of a universal scheme or plan. If King John had not been so tyrannical and vacillating, there would have been no Magna Charta.

Believing, as we must, that Individualism supplies the magneto-spark that sets the wheels of Industrialism and Commercialism going, and that all are bound up with, and dependent upon, the industrial life of a nation, the new charter must recognize the rights of the captains of industry—the creative men of initiative—who lead the way to all true economic progress. The adoption of this charter will undoubtedly prove the signal for the introduction of a new era of prosperity, just as the signing of the Great Charter ushered in a century of marvelous architectural, educational and industrial development.

Under a sound system of economics, freed from the shibboleths of socialistic propagandas, the entrepreneur or business man can serenely conduct his enterprises without resort to shady methods, knowing that as long as he plays fair there will be no governmental interposition. Then, and not until then, economic emancipation will, in all verity, have come.

XVI.

CONCLUSION.

In conclusion, summarizing the lessons of the preceding chapters, it may be said that anything which stagnates productive thought (ideaistic wealth), or destroys the initiative, whether by restrictive legislation, undue interference with individualism, or by agitation looking to that end, is destructive of true progress. Specifically, the commercial and industrial *ignis fatui* include such doctrines as socialism, syndicalism, government ownership, physical valuation, single tax and the shibboleth of human rights vs. property rights. It has been proven that human and property rights are inextricably intertwined.

The golden—not gold—age, however, will come when man shall devote his time and money to the satisfaction of higher wants, when his physical cravings give way to mental aspirations. He who now desires drink will satisfy his soul with music; she who now spends her money in vulgar display will then become a patron of the arts; the sensualist, the glutton and the man who schemes for money for money's sake, will then devote their leisure in learning of the highest things in life, in reading the best in literature or enjoying the best in the arts.

This golden age will not come next year, or next century; it is needful that man pass through a long

æon of evolution before this shall come to pass. In the meantime, it behooves all to make the best of things as they are—to decline to envy those who possess more of this world's goods, and, in striking the balance, to take into consideration character and happiness, and, above all, to realize that this age (and land) is the best and most prosperous in the history of the world.

The ideal life consists in finding your work, your niche, and in adhering to the principle of giving and taking the best. That is, to be in a position to deliver things of worth and to benefit others, and to hold yourself in readiness to receive like benefits.

But what can be done to adjust the economic inequalities as they exist to-day? Before answering the question, it can be stated that there are apparent inequalities in all phases of life. Men are born with great talent and with little talent, with broad characters and narrow characters, and women are born with beauty and loveliness and with the opposite qualities. What can be done for all these?

But if we examine a little closer into these apparent disparities, many of them will dissolve into thin air. The great accumulations of the wealthy have not only been acquired under great stress, but by close application to business many have wrecked their health and dispossessed themselves of all that constitutes real wealth, which comes, not from without, but from within.

On the one hand lie contentment, happiness, faith, hope, "plain living and high thinking;" on the other, envy, strife and seething struggles for,

and perhaps at last a realization of, riches or honor or fame. Stated generally, man accomplishes and secures that which he desires and strives for. Emerson's great essay on "Compensation" clearly sets forth the mythical nature of many of the alleged inequalities existing in the world.

The answer, then, to the question of adjusting economic disparities, stated as a broad principle, is not to make all equally wealthy, but to educate the youth in all that makes for the best in citizenship, and to show him how he can use his powers to attain the highest and best in life.

But, it may be asked, what has all this moralizing to do with the science of Political Economy? The reader who asks this question has failed to grasp the pivotal argument or thesis of the book; namely, that the essence of things, and not the things themselves, constitutes the basis of value; that the essence of man is his mental and moral natures, and that whatever affects these strikes at the root of his worth socially and economically. The materialists, including the greater part of the socialists, who would try to make over man from the outside, through changes of environment and external remedies, are as a hound baying at the moon.

The great lesson is that man holds his destiny in the hollow of his hand; that the seeds of happiness and moral and material prosperity must be planted in his mind, that from his personality may spring both power and riches to benefit and uplift himself and the world.

Then, again, the captains of industry must learn that if the prevailing economic system is wrecked

